REPORT RESUMES

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PHONOLOGY, TEACHING UNITS FOR INCORPORATION IN CURRICULA OF GRADES 11 AND 12.

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THE GENERAL OBJECTIVE OF THESE UNITS ON SEGMENTAL AND SUPRASEGMENTAL PHONEMES, PREPARED BY NORTHERN UNIVERSITY'S PROJECT ENGLISH CENTER, IS TO HELP 11TH- AND 12TH-GRADERS TO DISCOVER, THROUGH AN UNDERSTANDING OF PHONOLOGICAL PRINCIPLES, THE SYSTEMS UNDERLYING THEIR OWN LANGUAGE. SPECIFIC LANGUAGE-SKILL OBJECTIVES ARE THE IMPROVEMENT OF (1) SPELLING, (2) PUNCTUATION, BY CONSIDERING STRESS, PITCH, AND JUNCTURE, (3) USAGE, (4) UNDERSTANDING OF GRAMMATICAL RELATIONSHIPS, AND (5) ABILITY TO READ IMAGINATIVE LITERATURE, AS WELL AS EXPOSITORY PROSE. INCLUDED FOR THE UNITS ARE AN OVERVIEW OF PHONEMICS FOR STUDY BY THE TEACHER, DAILY LESSON PLANS, AND RESOURCE MATERIALS FOR A POSSIBLE 6-WEEK EXTENSION OF THE UNITS. ALTERNATE LESSON PLANS, EXERCISES, TESTS, AN ANNOTATED BIBLIOGRAPHY, A GLOSSARY, AND A SECTION ON SUGGESTED AUDIOVISUAL AIDS ARE INCLUDED. (MM)

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PHONOLOGY

Teaching units for incorporation in curricula of grades 11 and 12

Caution: These materials are being used experimentally by Project English participants, who are continuing to develop them. Units included, therefore, should be considered preliminary drafts.

Part I: Segmental Phonemes (1-127)
Part II: Suprasegmental Phonemes (128-157)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Project English Curriculum Center
Northern Illinois University
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TE000 263

1. Phonology: Segmental and Suprasegmental Phonemes

This material includes a short overview for teacher study of phonemics, and day-by-day lesson plans for a fifteen-day unit. Also provided is additional resource material for possible extension beyond the fifteen-day plan. Alternate lesson plans, exercises, tests, an annotated bibliography, a glossary, and suggested ausio-visual aids are included.

Participants in the Northern Illinois University Curriculum Center Project found that a fifteen-day unit in phonology was ideally suited for incorporation into the crowded curricula of grades eleven and twelve; a longer unit was difficult to use. Thus Section V11 is limited to fifteen days. If the teacher wishes to use this material in a context different from that of the fifteen participants at the N.I.U. Center, he may expand the unit to as long as six weeks by synthesizing Section VIII, Supplementary Materials; Section VII, the fifteen-day plan; and Part II, the six-day unit on suprasegmental phonemes.

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II. INTRODUCTORY NOTE TO THE TEACHER

The general objective of this unit on English phonology, as of all the units in this series, is to lead high school students to discover the systems underlying the language which they speak and read. The purpose is to achieve this discovery as inductively as possible by direct clinical examination of the language itself. Speech is studied first because it is the original form of language, whereas written language is a derived form primarily intended to represent speech. The overall objective can be stated in a word as insight into the English language.

There are also a number of specific language skills which use of this unit should improve. Showing the inadequacy of the English graphic system will help students understand much of English spelling. Considering the factors of stress, pitch, and juncture in English will improve insight into punctuation. Many common usage errors which result from sound problems (e.g., use to for used to) may be attacked. Students who understand the sound system of English will also reach a clearer understanding of grammatical relationships and will improve their ability to read imaginative literature as well as expository prose.

Both teachers and students who have a common understanding of English phonological principles will be able to understand the causes of many errors in speech and writing. This phonological approach will give the student a specific basis for avoiding errors by eliminating the mystery which often exists in the student's mind regarding the teacher's corrections.

The specific objective of this phonology unit is to provide the high school teacher with a practical working knowledge and suitable materials for the teaching of the nature and functions of English.

The unit begins with an overview of phonology for the teacher. Because the scarcity of materials and the specialization of published studies pose a maze of barriers for the average teacher, the annotated bibliography following the overview is divided into sources of information about the language itself (theory) and sources which provide teaching aids for the classroom (practice). Since classroom situations and course outlines vary tremendously, the materials for classroom use are presented as a package with separate divisions within the whole; the teacher may either use the whole or select parts. Suggestions are offered for suitable incorporation of these units within course outlines. The day-by-day plans reflect the experience of teachers who have tried the materials developed here. The glossary of terms is useful for both teacher and student. The terminology is kept purposely simple. There is some cross-reference for further clarification of terminology.

A section noting unforeseen situations and useful suggestions and attitudes for handling these situations is included, because comparatively few teachers have been trained to handle the study of phonemics.

The day-by-day plans have been used in actual classroom experience in various kinds of high school situations. The teachers using them have found them flexible. In this material, segmental phonemes are presented before the suprasegmental phonemes for reasons of greater efficiency and utility. Though this order is recommended, it is by no means necessary; the suprasegmentals may be taught separately or as part of the whole unit on phonemics.

It should be noted that the dialect used in the exercise materials is midwestern; changing to any other dialect for teaching purposes will pose no difficulties but should lead to a keener awareness of dialectal variations.

III. TEACHER OVERVIEW

A descriptive grammar of English involves a study of a system of speech sounds --PHONOLOGY, a study of words and their meaningful parts made up from the individual speech sounds --MORPHOLOGY, and a study of these word arrangements to form sentences --SYNTAX.

Study of English grammar should logically begin with a consideration of the speech sounds. Language is primarily oral and writing is an attempt to transfer sound to sight. Linguists have devised two visual systems: a system to represent significant sounds of speech --SEGMENTAL PHONEMES, and another system to indicate tones of voice --PITCH, emphasis STRESS, and pauses--JUNCTURE.

Speech sounds are sound waves created in a moving stream of air. Inside the larynx are two short bands of flesh and muscle stretched from front to back. The air which is expelled from the lungs passes between these vocal cords in the larynx and proceeds upward to one of the two possible outlets, the mouth or the nose. In producing speech sounds, the speaker either tenses or relaxes the vocal cords. If the vocal cords are tensed, they vibrate and the sound is called VOICED. If the vocal cords are relaxed, they do not vibrate and the sound is called VOICELESS.

The basic unit in the study of speech sounds is the PHONEME, a speech sound that signals a difference in meaning. Dame and tame sound exactly the same except for the /d/* and the /t/, yet their meanings are different.

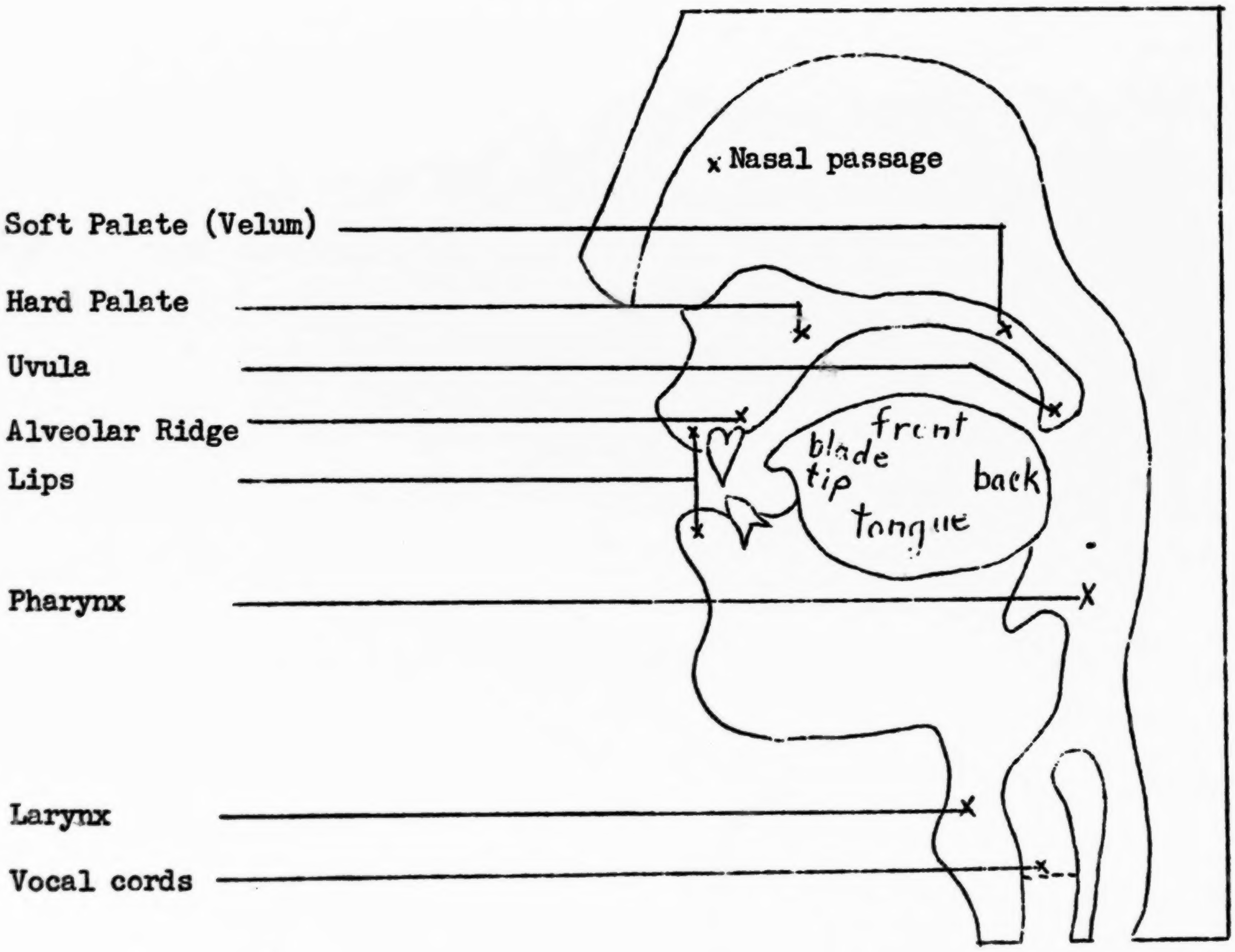
---

*The slant lines indicate a symbol representing sound, not a letter. The teacher should be aware that, when introducing the segmental phonemes, he should refer to them not as letters of the alphabet. For instance, /p/ is referred to by its explosive sound without a vowel sound following and not as the letter p.

Thus /d/ and /t/ are phonemes. Pairs of words which show a single phonemic contrast are called minimal pairs.

A phoneme can be pronounced in different ways and still remain the same phoneme. Such variants of a phoneme are called allophones. These allophones are represented with bracket enclosures whereas the phonemes are enclosed in slant marks. A phoneme is a class of similar significant sounds, not just an individual sound. If one pronounces lit and tell slowly and distinctly, one can hear two different l's. The use of one or the other of these l's never makes a difference in meaning, so they are not two phonemes but merely variants of the /l/ phoneme, allophones.

Segmental phonemes are broken into four divisions for the purpose of study: consonants, semi-vowels, vowels, and diphthongs. Below is a labelled diagram which may be helpful in examining the formation of these segmental phonemes.


Nasal passage
Soft Palate (Velum)
Hard Palate
Uvula
Alveolar Ridge
Lips
Pharynx
Larynx
Vocal cords
front
blade
tip
back
tongue

A. Consonants - segmental phonemes

1. STOPS

All stops are formed by completely interrupting the breath stream of the speaker. Stops vary in that the air stream is stopped at different places or points of articulation.

--- stops /p/ and /b/

The bilabial stop /p/ is formed by pressing the two lips together; hence, the term *bilabial stop*. The /p/ is voiceless: the addition of voicing creates the second bilabial stop, /b/.

---stops /t/ and /d/

The /t/ is formed by bringing the tongue tip against the gum ridge behind the upper teeth and holding the sides of the tongue firmly against the upper teeth. /d/ is formed in the same way, with the addition of voicing.

--- stops /k/ and /g/

In /k/ the sound is produced by pressing the back of the tongue against the soft palate behind the roof of the mouth. /g/ uses the same tongue-back, soft palate contact point to stop the passage of breath, but /g/ is voiced.

2. AFFRICATES /č/ and /ǰ/

The voiceless affricate /č/ is made by bringing the tongue tip to the gum ridge and immediately bringing it away somewhat more slowly than in the release of the stop. /ǰ/ is formed in the same manner with the addition of voicing.

3. FRICATIVES /f/ and /v/

Fricatives are produced by placing the lower lip lightly against the upper teeth. Friction is created as the breath is forced through. The sounds are distinguished by voicing: /f/ is voiceless while /v/ is voiced.

--- fricatives /θ/ and /ð/ (called theta and eth)

These sounds are created by the friction of the breath which is forced between the tip of the tongue and the upper front teeth. The /θ/ is voiceless. (thin, booth, ether, deathly) /ð/ is produced in the same way except that it is voiced. (the, either, there, bathe)

4. SIBILANTS /s/ and /z/

/s/ is voiceless while the /z/ is voiced. Both sounds are formed by the forcing of air through a groove in the top of the tongue. The tongue is against the ridge of the upper front teeth.

--- sibilants /š/ and /ž/

The /š/ is voiceless and made just like the /s/ except that the groove is in the blade and front of the tongue and the airstream hits the upper gum ridge. The /ž/ requires the addition of voicing. (/š/ - sh as in shall, /ž/ -ge as in rouge or s as in treasure)

5. NASALS /m/ /n/ /ŋ/

The /m/ is formed by closing the oral cavity and vibrating the air in the nasal cavity. The /m/ is thus nasal, bilabial, continuant. The /n/ is formed by blocking the oral cavity with the tongue tip against the gum ridge and vibrating the air in the nasal cavity.

The nasal /ŋ/ is produced by a continuing resonance of the air in the nasal cavity. The oral cavity is blocked by the back of the tongue, which moves against the soft palate to force the air stream through the nasal cavity. (All nasals are voiced.)

6. LATERAL /l/

The /l/ is a voiced sound produced with the tongue-tip touching the gum ridge, with the sound spread out across the width of the tongue. The term lateral simply refers to the production of the sound across the width of the tongue.

B. Semivowels - segmental phonemes

1. /r/

The /r/ is termed a semivowel because it is always made in conjunction with at least one vowel. The /r/ blends rapidly into the vowel sound which follows it, or the vowel sound rapidly blends into a following /r/.

It is produced in three ways:

A. The tongue back /r/ - the tongue is raised back against the upper teeth, and the front of the tongue is sloped downward, with the tip of the tongue drawn slightly back. The lips are often somewhat rounded. The above is the most common way the /r/ is made in general American dialect.

B. The tongue-tip /r/ - the back of the tongue is raised against the upper teeth, and the tip of the tongue is turned upward and drawn back, nearly touching the back of the gum ridge. It is relatively easy to make a trilled /r/ from this position by pressing it against the gum ridge as the air is forced over the tip of the tongue.

C. The friction /r/ - the tip of the tongue is placed close to but not touching the gum ridge. When air is forced over the tongue tip, a friction occurs. It is the voiced sound in the initial position, but may be voiceless after a voiceless sound (tree, three). It is most likely to be produced in American speakers after the tongue-tip consonants such as /t/, /d/, and /θ/.

2. /w/

The lips are rounded slightly while the back of the tongue is raised toward the back of the soft palate. The tongue is then released rapidly to move to the position of the next vowel.

3. /y/

The /y/ sound is produced by raising the front (but not the tip) of the tongue toward the hard palate and expelling the voiced breath as the tongue moves away from the position just described and toward the position of whatever vowel follows. This movement is often termed a glide.

Like /w/, the /y/ is characterized by motion of the speech agents rather than by a maintained position.

4. /h/

The /h/ is a central semivowel formed by dropping the position of the jaw. It is normally voiceless, but it is voiced between two voiced sounds in inhibition, Sahara, and perhaps.

The /h/ differs from all the other consonants of the fricative class in that it lacks any fixed articulation position in the oral cavity. The velum is closed to block the nasal cavity, and the slight friction of the sound is produced at the half open vocal lips and modified by the resonance of the oral cavity as determined by the tongue and lip positions assumed for the following vowel or semivowel.

Thus /h/ has as many positional variations as the number of vowels and semivowels that can follow it.

C. VOWEL SOUNDS - (General) - segmental phonemes

Vowels differ from consonants in being produced by the relatively unobstructed passage of breath through the mouth. Thus they contrast with consonants which, as we have seen, are produced by some contact or constriction of the speech organs, resulting in complete or partial stoppage of breath.

Vowels are distinguished from one another in several ways:

1. length
2. height of tongue
3. place of articulation
4. tension of tongue muscles
5. rounding of lips

1. HIGH VOWELS /i/ and /u/

The phoneme /i/ is a high, front, lax vowel, with the upper surface of the tongue less convex, and no muscular bulge under the chin. The decreased tension of the tongue is important.

The /u/ is a high, back, lax vowel. The tongue is retracted from the front position for /i/, and the lips are not fully rounded.

2. MIDDLE VOWELS /e/,/ə/, and /o/

The vowel phoneme /e/ is the mid-front lax vowel. The tongue muscles are relaxed, and no bulge can be felt under the chin.

The unstressed vowel /ə/ is a central lax vowel. As the sound is produced the tongue, jaw, and throat are relaxed. The sound is produced without apparent articulation above the throat. This sound could be described as a "gruntle": poke yourself in the stomach hard enough to produce an involuntary cry, and that sound should be /ə/ or close to it.

The /o/ vowel phoneme is produced with rounded lips, and it is described as a middle back vowel. Middle refers to the relative tongue height, and back indicates that the tongue is bunched in the rear of the mouth.

3. LOW VOWELS /æ/, /a/, and /ɔ/

To understand the low vowels, hold the finger horizontally under the jaw while the vowels /i/, /e/, and /æ/ are pronounced. The dropping of the jaw, registering the dropping of the tongue from high to low, can readily be felt.

The low front vowel /æ/ is produced with rounded lips and the tongue is relaxed in a low, frontal position.

The low central vowel /a/ is produced with the tongue-arch in the center of the mouth, midway between the front and back vowel positions.

The tongue is retracted and bunched at the back of the mouth to produce the low back vowel /ɔ/.

D. DIPHTHONGS - segmental phonemes

Diphthongs are composed of a simple vowel sound combined with a gliding movement of the tongue to an upward and forward position (fronting diphthongs) or to an upward and backward position (retracting diphthongs).

1. Fronting diphthongs /iy/ and /ey/

The /iy/ is made in two ways; the first is by gliding the tongue toward the /i/ position as in yes, the second is by gliding the tongue away from the /i/ position as in say.

The /ey/ is a mid-front tense diphthong. The tension of the tongue muscles can be felt in the bulge under the chin as for /iy/.

2. Fronting diphthongs /ay/ and /ɔy/

The low central vowel diphthong /ay/ and the low back /ɔy/ are created by the lengthening of the vowel followed by a gliding movement of the tongue toward the /i/ position.

3. Retracting diphthongs /aw/ and /uw/

The retracting diphthongs are formed with the tongue in the position of the beginning vowel /a/ or /u/. The tongue is retracted during the glide to the position of the high back vowel /u/.

TABLE OF SEGMENTAL PHONEMES

CONSONANTS

Stops

/p/	pin
/b/	ban
/t/	tick
/d/	dad
/k/	cat
/g/	gag

Affricatives

/č/	chin
/ǰ/	jam

Fricatives

/f/	fall
/v/	vine
/θ/	thin
/ð/	the

Sibilants

/s/	sin
/z/	zeal
/š/	shin
/ž/	rouge

Nasals

/m/	mum
/n/	nuance
/ŋ/	sing

Lateral

/l/	law

SEMIVOWELS

/r/	roar
/w/	woo
/y/	you
/h/	his

VOWELS

/i/	pit
/e/	bet
/æ/	nap
/ə/	but
/a/	hot
/u/	put
/ɔ/	law
/o/	home

DIPHTHONGS

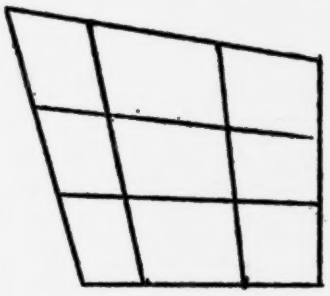
/ay/	my
/iy/	he
/ey/	way
/ow/	go*
/uw/	moo
/aw/	out
/ɔy/	boy

* Glide from /o/ to /w/ often produces /ow/

	Front	Central	Back
High	i	ɨ	u
Mid	e	ə	o
Low	æ	a	ɔ

Vowel Chart

This square vowel chart is a conventionalized representation of the human mouth. A more accurate chart is sometimes used, one which is shaped in imitation of the mouth seen from the side. The view is always that of the left profile with the lips to the left and the throat to the right.



The conventionalized drawing is not meant to limit English vowels to nine. Vowel sounds flow smoothly into each other and are of great variety. The effort here is to agree on types while admitting the great variety. Students should understand that the boundary lines are arbitrary and rather comparable to state lines indicated in weather reports.

SUPRASEGMENTAL PHONEMES

Each phoneme is a meaningful component of the continuous flow of speech. The phonemes considered so far are called segmental phonemes. These phonemes are uttered with varying degrees of stress. The voiced phonemes are sounded on different pitch levels, and pauses are used to pattern the whole utterance into groupings. These three oral practice , STRESS, PITCH, and JUNCTURE are phonemic. Since they accompany or are superimposed on the segmental phonemes, they are called suprasegmental phonemes.

SUPRASEGMENTAL STRESS PHONEMES

Stress refers to a degree of prominence a syllable has. There may be as many degrees of stress as there are syllables; but, since many of the differences will be slight, concentration here will be on those differences of stress that have the power to distinguish meanings - the stress phoneme.

/ primary stress
\ mid stress
◡ weak stress (usually not indicated)

In contrasting conflict (noun) with conflict (verb):

cónflìct n.
cònflíct v.

the words remain identical except for the positions of their primary and mid stress which signify the noun and the verb.

Concentration on word groups and sentences calls for all four degrees of stress:

/ primary
∧ secondary
\ third
◡ weak

'Remarkable' as a word has all three degrees of word stress, but when the word occurs in a phrase, its primary stress is demoted to second.

remárkable

remâkable invéntion

SHIFTING STRESS

Stress can shift. Many words have a primary stress on the last syllable when in isolation or positioned before weakly stressed syllables. Placed before a stressed syllable, the primary stress shifts to the front of the word.

overníght   ôvernìght guésts

Grammatical patterns are accompanied by regular stress patterns.

I. A compound noun usually has the /\ pattern.

máilmàn   rócking chaìr

II. Modifier and noun pattern is signaled by ∧ /.

dârk róom

III. Qualifier and adjective or adverb takes pattern ∧ /.

quîte háppily

IV. Verb and noun-object pattern has a ∧ / stress.

They are râcing hórses.

(This pattern sometimes contrasts with the compound noun stresses.)

V. Verb and adverbial grammatical pattern has a ∧ / stress pattern.

You must lôok óut.

(The compound noun derived from this pattern retains the / \ stress pattern.)

The lóokòut had a long vigil.

VI. Really pattern I. reversed. \ / as in

RHÒDE ÍSLAND and other proper nouns.

Sometimes either pattern I. or VI. can be used, as in

shórt stòry or shòrt stóry

(Paraphrase to clarify meaning:

An òld máid is really not an óld màid.

A spinster is really not old.)

GRADATION: A change in vowel quality when stress is reduced to weak stress.

Hé's a jûst man. /hiyz ə ǰə̂st mæn/
Jŭst a minute. /jɨ̌stə minit/
(Notice the change in just)

Áre you coming? /ár yuw kəmiŋ/
Whén ăre you coming? /hwén ə̆r yə̆ kəmiŋ/
(Notice the change in are and you)

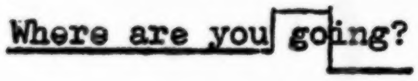
SUPRASEGMENTAL PITCH PHONEME

Most linguists recognize four phonemic levels of pitch in spoken English - phonemic levels because these levels indicate differences in meaning. There are fluctuations in pitch which do not affect meaning and which may be considered as allophones of the same pitch phoneme. Not all use the same pitch levels (the same four absolute pitch levels), but most use the same number of pitch distinctions. These levels are labeled from lowest to highest simply as 1, 2, 3, and 4. Pitch phoneme 2 is considered the characteristic middle pitch level of the individual American English speaker. In written transcription, small superscribed numbers are used to indicate pitch levels. For example:

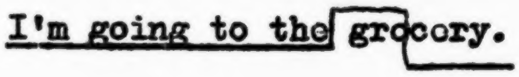
2 3 1
Where are you going?

2 3 1
I'm going to the grocery.

Some prefer to use lines to indicate these changes:

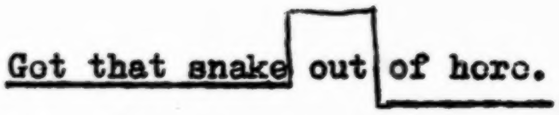


Where are you going?



I'm going to the grocery.

When unusually strong emphasis is indicated, the voice may rise to pitch 4:



Get that snake out of here.

NOTE: INCLUDED IN THESE MATERIALS IS A UNIT ON MARKING SENTENCE CONTOURS WHICH THE TEACHERS WILL FIND HELPFUL. See SUPPLEMENT A

SUPRASEGMENTAL JUNCTURE PHONEMES

Besides using stress and pitch, speech modulates its flow by means of junctures, which are breaks in the continuity of an utterance, sometimes accompanied by changes in pitch. There are four juncture phonemes: one internal or open and three terminals. The first of these junctures, called plus juncture /+/, can easily be recognized merely by listening to the differences in the divisions between the following pairs:

gray + train	that + school
great + rain	that's + cool

By means of internal open juncture we are able to make distinctions between homophonous pairs like the above examples.

The next juncture, the single bar /|/, is characterized by a slight pause between stretches of speech which constitute an utterance, without any change in pitch.

He saw all the students | who reported for class.

Double bar juncture /||/ consists of a pause accompanied by a slight rise in pitch. In writing, the juncture would be shown here by using commas.

This man || who comes here every day || always brings his lunch.

This man, who comes here every day, always brings his lunch.

Double-cross juncture /#/ may consist of a pause and pitch-drop with voice-fade between two closely-joined stretches of speech, sometimes represented in writing with a semicolon:

I miss my sister # I wish she were here.

I miss my sister; I wish she were here.

Its use marks the ends of sentences and some questions:

When will he arrive #

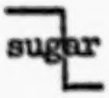
He will get here by early morning #

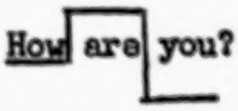
Other questions are normally marked in speech by the use of the double bar terminal juncture, a rise in pitch: "Are you coming over tonight" //.

TEACHER OVERVIEW

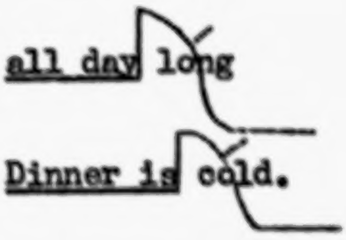
SUPPLEMENT A

Let us agree that a line drawn at the base of the letters of a word (have) indicates that the word is pronounced in a normal tone. A line above the word (sugar) marks a high tone. A line some distance below the the word (sugar) marks a low tone. Usually the movement from one tone to another takes place between syllables. To represent this we will use a straight vertical line.

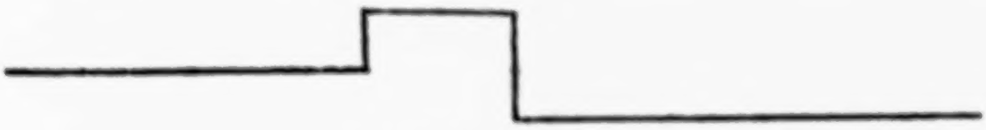




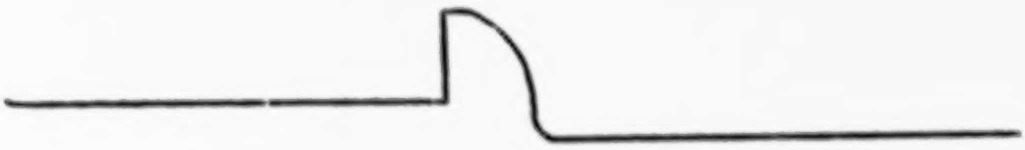
Sometimes, however, the voice slides from one tone to another while it is pronouncing a syllable. This frequently happens in a monosyllable. Such a movement within a syllable we will mark by a line curving up or down.



Correct intonation is most necessary at the end of a sentence. Here the voice most frequently rises above normal, then falls below normal. Thus, the most common English intonation pattern looks like this:



or this:



The important key to these patterns is the high level which usually accompanies primary stress. Thus, we can say that the high pitch coincides with the final sentence stress.

He likes sugar.

I don't hear you.

When did he call?

The fact that the high pitch usually coincides with final sentence stress enables us to distinguish between items like blackboard and black board.

He wrote on a blackboard.

He found a black board.

In English, rising-falling intonation is normally used at the end of

1) simple declarative sentences:

This is my son.

He found a golf ball.

2) commands:

Come home.

Close the window.

3) questions which begin with a question word: who, what, why, when, where, how, whom, whose:

What is the matter?

How are you feeling?

Why is he mad?

At the end of a sentence two types of intonation are most common: rising-falling and rising. We have just seen how rising-falling intonation is used for statements, commands, and question word questions. In English, rising intonation is used at the end of two kinds of questions:

1) It is used at the end of yes/no questions in statement form:

He's gone?

It's time to go?

2) It is used at the end of yes/no questions in question form:

Are you there?

Do you see?

Rising intonation may also occur in a number of non-final positions in various kinds of utterances. Frequently, special attention is called to question words and demonstrative pronouns.

What did you do?

I think that is a bad thing.

In comparisons and contrasts special attention is called to both ideas.

Tom writes better than she does.

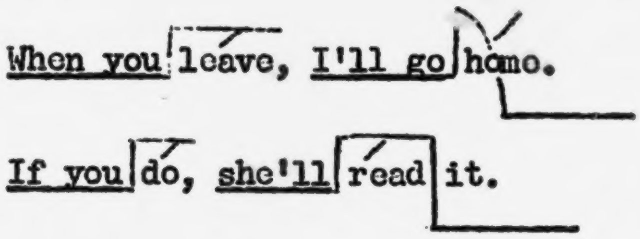
The old car is worse than the new one.

When an utterance is divided into two or more thought groups, each group has its own intonation pattern.

I can't go; it's too cold.

She says yes; he says no.

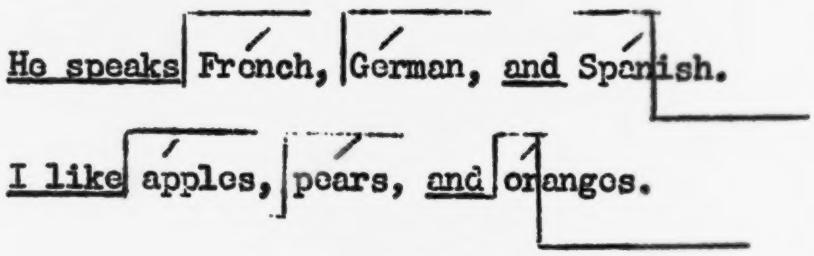
Incomplete utterances end with a rising inflection:



When you leave, I'll go home.

If you do, she'll read it.

Items in series have rising intonation in all but the last item; rising-falling intonation in the last:



He speaks French, German, and Spanish.

I like apples, pears, and oranges.

IV. THE RELATION OF PHONOLOGY UNITS TO THE ENGLISH CURRICULUM

A unit in phonology has relevance to almost any part of English study. A logical place for this unit is at the beginning of the year. A fresh approach to language provides an exciting change and a foundation for new discoveries by the student of different aspects of literature, and the study of phonology provides insight into the workings of language in various relationships. For instance, a class which studies literature of the Anglo-Saxon period will find that the sounds of Anglo-Saxon provide the key to rhythms and poetic devices. Early phonological changes in language will demonstrate some of the processes of language change, and eventually the differences between American and British English, and, currently, between geographical dialects. The shifts of word function will alert the student to historical changes in meaning. The study of suprasegmental phonemes will emphasize the aspects of oral reading of literature as well as the more obvious intricacies of signaling question forms, series, choice, innuendo, and the subleties of spoken English which are important to interpretation.

Because language is such an integral part of English studies, various units of phonology will have pertinence with varying degrees of emphasis; therefore, a study of small or large units can be incorporated into the curriculum.

In the study of literature, phonology is especially effective with Anglo-Saxon and Middle English works or the play Pygmalion. (The preface to the play reveals fascinating information and Shaw's keen interest in the sounds and operations of language; the record of the stage production My Fair Lady produces the rich varieties of sound which Shaw was manipulating and which an American student probably never hears.)

Obviously the study of phonology is related to the composition of the rhythms and rhymes of poetry. The insight into word relationships and shifts in functions will suggest choice of appropriate vocabulary in subtle ways. Assonance will have an operational assist. Recognition of the poet's skill in the manipulation of language will lead to a perceptive appreciation on a deeper level; this in turn will appear in the student's own creative efforts.

In the study of composition, understanding suprasegmental phonemes helps the student develop keener sentence sense and clarifies conventions of punctuation. Shifts in stress reveal shifts in function and operate as signals in grammatical recognition.

The students' spelling problems become less severe because of their insight into regular and irregular patterns--and exceptions. Because the phonological approach differs from that of conventional teaching, it offers freshness and vitality. Student "discoveries" of their own problems reveal more to them than does the formal study of spelling.

Oral composition is readily affected by the transfer of understandings pertinent to written composition. Meaning that is implicit in suprasegmental phonemes will sharpen a student's sensitivity to hitherto unrecognized subleties of delivery and, conversely, to a more penetrating comprehension when listening.

V. MEETING SOME UNANTICIPATED SITUATIONS AND ATTITUDES

The situations treated here represent unforeseen "problems" which have been observed when teaching the unit of phonology. The commentary which follows each situation is intended to provide suggestions and attitudes which have proved helpful.

1. Problem: One of the major problems of the teacher is the insecurity in teaching a unit which seems new and untried and for which few materials exist as yet.

Comment: The interested teacher will soon discover that the suggested approach to language study is logical and that he will be able to share with his students the excitement of language understanding. The teacher will also find that this approach will confirm, clarify, and codify much of his existing knowledge of his native language.

2. Problem: The teacher without speech training often feels uncertain.

Comment: He can find the speech correctionist a valuable resource person for phonological materials.

3. Problem: The misuse of spoken English by adults is a source of mockery by children.

Comment: Students at the high school level will recognize this problem as one which they can successfully handle, thus avoiding ridicule of their own speech. For students to gain an understanding and appreciation of various dialects is a desirable outcome in itself.

4. Problem: Teachers may be apprehensive regarding their ability to handle all of the unexpected questions.

Comment: The use of the inductive approach in teaching a phonological unit will naturally foster an attitude of cooperation between the class and the teacher in exploring language. Students are excited by the challenge of finding examples other than the samples already offered by the teacher in demonstration. Students can do research in library sources, thus becoming acquainted with aspects of linguistics that are broader than phonology.

5. Problem: Teacher presentation of materials tends to dominate the unit.

Comment: Students can learn much of the material through exercises which present corollary principles and information and which will give them practice at the same time.

6. Problem: Teachers exhibit reticence in trying the sounds of the language and practicing phonemes.

Comment: Curiosity leads to willingness to attempt sounds, especially if the teacher is willing to over-accentuate and to demonstrate freely and have the students practice imitations.

7. Problem: The differences in pronunciation between students and teacher and between students within the class or community lead to different phonemic transcriptions.

Comment: Because of the differences in speech, there will be variations in the hearing of sounds. These different sounds should be carefully recorded as the student hears them, not as he thinks they should be heard. The emphasis is on the learning of the distinctions of sound. As the student learns the distinction of sounds and can hear them more and more acutely and accurately, he will learn to hear sounds rather than see them as he thinks they should be spelled. Both an interest in dialects and an awareness of spelling confusions will develop naturally from this interest in sound distinctions.

8. Problem: Teachers tend to move slowly through the units--to explore widely rather than to illustrate principles and exceptions.

Comment: The focus of the study should be on the purposes of the unit; the whole range of phonology can never be covered anyway. The pacing of the unit should permit student contributions of patterns and divergences as further illustrations rather than as a catalog of the language.

9. Problem: Literal-minded students tend to think that phonemes are to be substituted for the present spelling system.

Comment: The emphasis must be placed on the fact that phonemics represents a system of sounds, not spellings.

10. Problem: In studying suprasegmental phonemes, some students have a marked difficulty in perceiving the difference between stress and pitch.

Comment: This material can be reinforced by teaching a second time, briefly, or by contrasting pairs of examples.

11. Problem: In studying suprasegmental phonemes, students present a wide variety of contours for a certain sentence.

Comment: The variation presents a good example of the flexibility of spoken English in practice, or variety within and aside from an accepted practice or pattern. However, frequently student examples are unconsciously forced and not natural. An awareness of frequently recurring patterns is one purpose of the study.

12. Problem: Poor spellers have difficulty in learning phonemic transcriptions.

Comment: Difference in student abilities to hear distinctions needs to be recognized. Sometimes these students gain greater insight into their own difficulties with spelling, and they learn to listen with greater accuracy.

13. Problem: In the teaching of phonemics, teachers and students are sometimes surprised by the seeming impreciseness of the allophones (similar sounds which are not important to distinguish meaning.)

Comment: The variations usually create curiosity and an insight into the nature of dialects. In the midwestern speech of this unit, there is no clear distinction between the sound of /o/ and /ow/. The use of /ow/ instead of /o/ to represent the sound as in *go* and *low* is preferred here because it validates the rule for doubling consonants. Likewise, the /ər/ sounds are difficult to separate regularly from the /ɨr/. The use of the /ər/ sound is recommended in place of the /ɨr/. Curiously, some students will be stimulated to listen for definite distinctions and will then insist on using the /ɨ/; those who cannot hear it will not be unduly frustrated.

14. *Problem*: The absenteeism of students during the study of this unit means private tutoring for make-up of the oral explanations.

Comment: A tape of class instruction and oral exercises will preserve the materials for later use.

15. *Problem*: Some students resist something new that does not appear on ACT and College Board tests.

Comment: The "so what" sessions (see p. 42) deal with practical aspects. The delight in a new approach and the various discoveries seem to allay first-day scepticism.

16. *Problem*: Teachers expect a patterned reaction on the part of the students.

Comment: Some students may be unacquainted with formal tone and therefore respond with the usual informal patterns. Awareness of the range of tone in English may be an unexpected bonus for these students, introducing subtle cultural indicators and a basis for rhetoric.

VI. BIBLIOGRAPHY

A. Theory

Allen, Harold B., ed. Readings in Applied English Linguistics. New York: Appleton-Century-Crofts, Inc., 1958.

A good source for general background information on the entire field of linguistics.

Buchanan, Cynthia D. A Programed Introduction to Linguistics: Phonetics and Phonemics. Boston: Heath and Co., 1963.

A detailed, complete programed text. This book would help the teacher gain a mastery of phonemics in a short time before teaching it. The programed format forces the teacher to experience some of the difficulties his own students will probably meet.

Francis, W. Nelson. The Structure of American English. New York: The Ronald Press, 1958.

Ch. 2, "The Sounds of Speech: Phonetics," pp. 51-118; Ch. 3, "The Significant Sounds of Speech: Phonemics," pp. 119-161. A complete and detailed treatment of the segmental and suprasegmental phonemes. Perhaps the book is a bit too long to be absorbed in the rush of the school year.

Gleason, H. A., Jr. Linguistics and English Grammar. New York: Holt, Rinehart, and Winston, 1965.

Entries in the index will lead the reader to brief, enlightening statements about phonology. Ch. 18, "Literary Form and Style," gives a brief indication of the relation between conventional English scansion and a more complex (but more realistic) scansion based on the four degrees of stress. The book contains a good, brief explanation of the suprasegmentals, but it makes few applications and contains no drill material.

Guth, Hans P., English Today and Tomorrow. Englewood Cliffs, N. J.: Prentice-Hall, 1964.

The author presents a good, brief summary of phonemics, segmental and suprasegmental. In the same chapter, pp. 25-34, he deals well with the basic assumptions underlying the linguistics movement and places it in historical perspective. Ch. I, "A Preliminary View," pp. 3-24, gives an up-to-date balanced picture of the present status of English teaching.

Kurath, Hans. A Phonology and Prosody of Modern English. Ann Arbor, Mich.: University of Michigan Press, 1964.

This is a definitive work that provides dialectal variations. It is an exhaustive, authoritative source on American English sounds. The author is general editor of American dialectal atlases and the Middle English Dictionary.

"Linguistics in the Classroom," The English Journal, No. 5 (May, 1963), 320-69.

The entire issue is devoted to linguistics with emphasis on grammar. Suggestions regarding classroom practices are given.

Lloyd, Donald J. "Sub-Cultural Patterns Which Affect Language and Reading Development," Language, Linguistics, and School Programs (Proceedings of the Spring Institute, 1963, of the National Council of Teachers of English) Champaign: National Council of Teachers of English, 1963.

This article on the uses of linguistics in teaching reading was the source of the theory of stress-juncture as a guide to punctuation. The author describes how the reader uses the punctuation to determine where he will put the stress and juncture.

Malmstrom, Jean. Language in Society. New York: Hayden Book Company, Inc., 1965.

Interesting background reading to show, as the author explains, "the deep, close-knit connections between language and society throughout the world." Emphasis is on the role of English throughout the world. The booklet contains an excellent listing of recordings dealing with speech sounds.

Marckwardt, Albert H. American English. New York: Oxford University Press, 1958.

The author stresses developments affecting the changes in English in America.

Newsome, Verna L. Structural Grammar in the Classroom. Milwaukee: Wisconsin Council of Teachers of English, 1961.

This booklet is designed to help the teacher who is just beginning his study of linguistics and who wants to know about the relationship of linguistics to the teaching of English. It also contains practical exercises for the classroom situation.

Pike, Kenneth L. The Intonation of American English. Ann Arbor: The University of Michigan Press, 1946.

Sledd, James. A Short Introduction to English Grammar. Chicago: Scott, Foresman and Co., 1959.

This book, pp. 20-36, has one of the best explanations of shifting stress with accompanying drills to reinforce the learning. The author's method of contouring a sentence is somewhat different from that of other authors.

Stageberg, Norman C. An Introductory English Grammar. Chicago: Holt, Rinehart and Winston, Inc., 1965.

This is a college grammar textbook, moving from phonology through morphology and syntax. It is an invaluable sourcebook for exercises and methods of presenting phonemic theory. It has a full explanation of pitch, stress, and juncture with excellent drills, many of which are used in this material.

Standard College Dictionary, Text edition. New York: Harcourt, Brace and World, 1963.

This dictionary has an excellent, brief introductory article to phonology, "English Grammar and the Grammar of English," by Kenneth G. Wilson, pp. xv-xvii. Because of its complete definitions of linguistic terms and its excellent introductory section, this is the most valuable of the desk-size dictionaries for a teacher of phonology.

B. Practice

Anderson, Wallace L. "Structural Linguistics: Some Implications and Applications," English Journal, XLVI (October, 1957), 410-418.

One purpose of this article is to show relationships between suprasegmental phonemes and punctuation.

Conlin, David A. Grammar for Written English. Boston: Houghton Mifflin Co., 1961.

Ch. 17, "Phonemics and Spelling," pp. 269-281, and Ch. 18, "Punctuation," pp. 288-306, are especially valuable for practice materials.

DeLancey, Robert W. Linguistics and Teaching, A Manual of Classroom Practices, Monograph number Nine. New York: The New York State English Council, 1965.

The author suggests that the purposes of the booklet are: (1) to provide a brief introduction to selected aspects of linguistic analysis, (2) to furnish specific suggestions for the classroom, and (3) to make suggestions for further readings in linguistics as a science and the application of linguistics in the classroom.

Hall, Robert A. Sound and Spelling in English. Philadelphia: Chilton Co., 1961.

This booklet, as the title implies, contains many excellent suggestions for applying phonological principles to the teaching of spelling.

Malmstrom, Jean, Dialects USA. NCTE

A brief overview with practice exercises to introduce the student to the various dialects in the United States. (See the issue of the English Journal for ways of using this material.)

Ashley, Annabel T. Using Dialects USA in High School Classes.

English Journal (April, 1964), 256-265.

Roberts, Paul. English Sentences. New York: Harcourt, Brace & World, Inc., 1962.

A high school text based on transformational grammar. Suprasegmental phonemes are treated on pages 167-188; segmental phonemes, 248-264. Suprasegmentals are related to punctuation, segmentals to spelling. Chapter 36, pages 248-256, is devoted to phonemes. A good teacher's manual is available.

Roberts, Paul. Patterns of English. New York: Harcourt, Brace & World, Inc., 1956.

This is a high school grammar based on structural linguistics. Part VIII, "Intonation and Punctuation," pp. 223-264, treats phonemes, segmental and suprasegmental. The explanation of intonation is somewhat more simplified than that found in Understanding English. Although brief, it is particularly useful in explaining restriction and nonrestriction. The text contains many practice exercises, and the introduction to the teacher's edition is valuable.

Roberts, Paul. The Roberts English Series: A Linguistics Program, Teacher's Edition, Book 6. New York: Harcourt, Brace & World, Inc., 1966.

The section on "Phonology," pp. 309-323, is valuable. Roberts' phonemic symbols differ from those used in this material, and the reader may balk at his nomenclature (e.g., /i/ is called "ick"), but he gives a convenient spelling summary for each phoneme, with useful examples, which will help the teacher to foresee difficulties.

Roberts, Paul. Understanding English. New York: Harper & Row, 1958.

In Ch. 7, "Sounds and Letters," pp. 84-100, Roberts gives an explanation of phonemics that is easily understood. Ch. 8, "How Do You Spell Ghoti," pp. 100-122, is an often quoted source on the subject of spelling difficulties. In Ch. 16, "Intonation," pp. 237-257, Roberts starts with the premise that intonation is the basis of punctuation and gives a clear, concise explanation of pitch, stress, and juncture. He also shows some of the relationships

between the suprasegmentals and punctuation. Although designated as a college-level textbook, most high school students would be able to handle the exercises without undue difficulty.

Stageberg, Norman C. "Some Structural Ambiguities," English Journal, XLVII (November, 1958) 479-486.

Stageberg presents twenty examples of structural ambiguities that may be found in student writing. He provides specific ways of eliminating the ambiguities in construction so that the student will write with greater clearness and precision.

Stageberg, Norman C. "Structural Ambiguities: Some Sources," English Journal, LV (May, 1966) 558-563.

The author discusses causes of structural ambiguity, which include suprasegmental coincidence, partial overlap of different suprasegmental patterns, and the absence of the suprasegmentals, which are ordinarily carried by the speaking voice.

Tyler, Priscilla. "Sound, Pattern, and Sense," Changing Concepts of Reading Instruction, International Reading Association Conference Proceedings, Volume 6, edited by J. Allen Figurel. New York: Scholastic Magazines, 1961, pp. 249-253.

Dr. Tyler stresses that accurate interpretation of reading material depends upon the reader's ability to select the correct sound pattern that fits a particular sentence.

C. Audio-Visual Aids

"Alphabet Conspiracy," a 16mm motion picture by Bell Telephone Laboratories.

(This film is available through the local Community Relations Representative of the Bell System.)

This film is a study of man's basic medium of communications. In a dream, the Mad Hatter and Jabberwock from Alice in Wonderland invite a little girl named Judy to join their conspiracy. They want to destroy the alphabet and free mankind of the "tyranny of language." Dr. Linguistics intervenes, explaining why people speak as they do. Animation and scientific sequences supplement the discussion. Slow motion pictures of vocal chords in action and movies of X-rays describe the action of tongue, teeth, and lips in speech. Phonemes are briefly described in Part I. An interesting cartoon on linguistic geography is included in Part II. A brief history of linguistics is also included.

"Computer Speech," a phonograph record by Bell Telephone Laboratories.

(This record is available through the local Community Relations Representative of the Bell System.)

This record of artificially created speech includes a passage which is devoid of suprasegmentals. To this passage are added, one by one, first pitch and then "timing," the last of which includes stress and juncture, until the passage resembles quite accurately a normal spoken utterance.

"Musical Sounds Heard by the Human Ear," a seried of 8½ x 11 charts by Illinois Bell Telephone Company.

(These charts are available through the local Community Relations Representative of the Illinois Bell Telephone Company.)

These multicolored charts are a facsimile of charts on display in "Your Telephone" exhibit at the Museum of Science and Industry, Chicago. They include a graphic representation of a piano keyboard on which are superimposed woodwinds, brass, percussion, strings, and the human voice, all in terms of frequency (cycles per second) and harmonics.

The Phonemic Computer--a phonemic wheel giving the phoneme, its spelling, and an illustrative word. (See p. 117)

Sound Production Slides--a series of color slides showing the positions of the speech organs as they change in uttering the segmental phonemes. (See p. 120)

VII. LESSON PLANS

A. Phonology: Fifteen-day unit

DAY-BY-DAY LESSON PLANS: Summary

1. Class: A demonstration of how to discover details of sound formation in the pronunciation of phonemes. The teacher can use his own name or other name to illustrate the possible positions of tongue and lips and oral cavity. Students can practice with the teacher.

   Assign: Each student is to analyze the ways in which the vocal apparatus is used in the pronunciation of his own name.

2. Class: Students will demonstrate the sounding of their names, thereby accumulating as a class the consonant phonemes in English. As students do this, the teacher can introduce the terms: voiced--voiceless, oral--nasal, stop--continuant, and vowel--consonant. Special attention is given in the phonemic introduction to the three pairs: p--b, t--d, and k--g.

   A showing of the slides will illustrate the formation of these sounds visually. If slides are not available, blackboard diagrams will suffice unless the teacher has a student-made poster-model of a sideview of the head with a movable tongue-piece and lip-piece.

3. Class: The students will present and discuss the formation of the sounds that they have discovered. As these are reported, the teacher will introduce the phonemic symbols. The teacher can introduce the term "minimal pairs" during this process.

   A showing of the slides will illustrate the various consonants and semivowels in a review for the class of what has been covered during the period. (This showing can provide a review at the beginning of the period the following day, if the teacher prefers.)

Assign: Worksheet I--to be completed by the student for the next day.

4. Class: A review of the consonant and semi-vowels either by recitation, demonstration, or the showing of slides. A discussion of Worksheet I. Introduction of the vowels /i/ and /e/. Practice with words which have these phonemes but different spellings--i.e., head, said.

Assign: Worksheet II--The students will write the first phoneme only in the list of words. The teacher can demonstrate with the first five or ten.

5. Class: A review of Worksheet II to date.

An introduction of the vowel chart, and the diphthongs.

A showing of the vowel slides.

Assign: Worksheet II--The students are to finish the words on the first half of the worksheet.

6. Class: A review of the words on the first half of Worksheet II.

Assign: The students will finish the second half of Worksheet II. The students will write in phonemic transcription jokes for other students to read on the following day. Students should be instructed to bring their dictionaries to class.

7. Class: A review of the transcriptions of the rest of Worksheet II. Students exchange their jokes written in phonemics.

Assign: Worksheet III--The student is to use his own pronunciation; if the word is not known to the student, he should use the dictionary.

8. Class: A discussion of Worksheet III, noting the differences between spellings in English and the phonemic transcriptions. A practice session in phonemic transcription using words which have peculiar

sounds. An introduction of the "so what" sessions--a discussion of the various peculiarities of the English language which a study of phonemics will clarify.

Assign: The reading of the chapter "How to Spell Ghoti" in Roberts' Understanding English if a classroom set is available. The emphasis is on the possible English spellings for each phoneme. If sets are not available, students can prepare reports on the materials for class presentation the following day. (These assignments could be made earlier.)

9.[1] Class: A continuation of the "so what" sessions. A discussion or reports on the range of spellings possible in English for the various phonemes.

10. Class: An introduction of the suprasegmental phonemes. See the worksheets with explanations.

11-13 Class: A continuation of the work on suprasegmental phonemes. The work of the previous day(s) can be reviewed and new materials in the sequence introduced and discussed.

14. Class: A review of the unit on phonology in preparation for the test on the following day.

15. Class: Test on the unit on phonology.

[1] The unit can be terminated after day nine if the teacher wishes.

Phoneme Worksheet I — Consonant Phonemes

REMEMBER YOUR SLASH MARKS!

Which two consonant phonemes are never initial in English words? /ŋ/ and /ž/

If an English word begins with three consonant phonemes in a cluster, there is fixed order of these phonemes according to type of sound. Can you figure out what this order is?

1. only s
2. voiceless stops /p/ /t/ /k/
3. /l/ /r/ /y/ /w/

What are the eight pairs of consonant phonemes which are similarly formed but which are differentiated by being voiced or voiceless? Give an original example word for each and underline the portion of the word which represents the phoneme.

1. a. /p/ ______
   b. /b/ ______
2. a. /t/ ______
   b. /d/ ______
3. a. /k/ ______
   b. /g/ ______
4. a. /f/ ______
   b. /v/ ______
5. a. /θ/ ______
   b. /ð/ ______
6. a. /s/ ______
   b. /z/ ______
7. a. /š/ ______
   b. /ž/ ______
8. a. /č/ ______
   b. /ǰ/ ______

Phoneme Worksheet II Transcription

USE SLASH MARKS! Transcribe the following words phonemically as you pronounce them.

deed ______________

tot ______________

coke ______________

gag ______________

stopped ______________

friend ______________

think ______________

then ______________

thin ______________

quit ______________

home ______________

sieve ______________

knife ______________

kettle ______________

Thomas ______________

guest ______________

that ______________

scent ______________

race ______________

raise ______________

xylophone ______________

shed ______________

machine ______________

watch ______________

wrestle ______________

loose ______________

lose ______________

linger ______________

prophet ______________

language ______________

vengeance ______________

gauge ______________

following ______________

virtue ______________

sip ______________

bout ______________

codfish ______________

nought ______________

not ______________

neat ______________

gentle ______________

stronger ______________

churches ______________

zip ______________

jest ______________

gnat ______________

link ______________

rhyme ______________

woo ______________

time ______________

tax ______________

breathe ______________

sword ______________

certain ______________

singer ______________

weight ______________

knew ______________

units ______________

gouge ______________

whether ______________

ship ______________

boat ______________

boot ______________

newt ______________

note ______________

nut ______________

path ______________

roses ______________

fowl ______________

fall ______________

feel ______________

full ______________

fool ______________

fail ______________

fuel ______________

file ______________

foil ______________

vacant ______________

breath ______________

shield ______________

chintz ______________

Phonemic Worksheet III (Use of this depends on the class. Some students know how these words are usually pronounced; some don't.)

Name________________________

Spelling and Pronunciation

Some of the words below may be familiar to you; others may not. If a word is familiar to you, write its phonemic transcription in the first column. If it is not familiar, look it up in a dictionary and write the pronunciation in the second column. USE OUR PHONEMIC SYSTEM RATHER THAN THE DICTIONARY'S SYSTEM.

Word	My pronunciation	Dict. Pronunciation
1. subtle		
2. Greenwich		
3. Worcestershire		
4. coxswain		
5. boatswain		
6. almond		
7. comptroller		
8. creek*		
9. breeches		
10. blackguard		
11. arctic		
12. corps		
13. asthma		
14. disheveled		
15. quay		
16. geography		

What dictionary did you use?________________________

*Note: I usually tell my students about the farmer who said that a man who says /kriyk/ "ain't never seen one."

"SO-WHAT" Sessions

The "so-what" sessions are discussion sessions which follow the lessons which teach phonemic transcription. The emphasis throughout is on the importance of phonemic environment in English words, not on spelling by formal rules. Part of this discussion involves spelling; some involves parts of speech. With the help of examples as starters, a class can discover the relationships involved. The underlying reasons for spelling rules become obvious through these sessions. The following are examples which suggest some of the environmental areas that a teacher might wish to cover. The discussion can be conducted with the blackboard or the overhead projector.

"SO-WHAT" SESSION: 1

Voiced - voiceless pairs:

intent	intend
extent	extend
descent	descend

*****

subscribe	subscription
describe	description

(Students who said they had formerly been forced to learn two spellings of this Latin root when they had had no Latin now felt the relationship was easy to see.)

bath	bathe
cloth	clothe

*****

grief	grieve
proof	prove
safe	save

lea*ve*	le*ft*
berea*ve*	bere*ft*

*****

loo*s*e	lo*s*e
hou*s*e (n)	hou*s*e (v)
u*s*e (n)	u*s*e (v)
clo*s*e (adj)	clo*s*e (v)
advi*c*e	advi*s*e

*****

Silent letters which become sounded:

condem*n*	condem*n*ation
autum*n*	autum*n*al
lon*g*	lon*g*er

Why does one often hear a /k/ in *length*? Why a *K*?

*****

Intrusive *p*

consume	consum*p*tion
resume	resum*p*tion
something	(Do you say "p"?)
warmth etc.	

*****

in-	i*n*secure
	i*ll*egal
	i*m*possible
	i*r*regular

*****

com-	co*m*motion
	co*ll*aborate
	co*n*vention
	co*r*roborate

*****

Doubling of final consonant

dined	dinned
hoped	hopped

*****

Pattern of pronunciation of -ed

/t/	/d/	/id/
rapped	sprayed	batted
asked	nabbed	gadded

*****

Pattern of pronunciation of -s and -es

/s/	/z/	/iz/
cats	cads	misses
laps	labs	dishes

*****

Combinations not used in English words

Vrtel Pfund	(family names in the area)

"SO-WHAT" SESSION: 2

WORKSHEET IV—Phonemics and spelling

I. Distinguish meanings

A. Different parts of speech and phoneme: (Note voiceless and voiced phonemes. What pattern seems to appear?)

grief—grieve (grievous)
intent—intend
loose—lose
bath—bathe

Other examples:

B. Different parts of speech and phoneme, but same grapheme: (Does the same pattern appear here?)

house—house (noun—verb)
use—use (noun—verb)

Other examples:

C. Different part of verb: (Why does the phoneme need to change from voiced to voiceless?)

leave—left
bereave—bereft

Other examples:

D. Different senses but same phoneme:

Whoever spies it first wins. (v)

Where do the spies meet? (n)

Which spy's satchel did you snatch? (n—poss.)

Note homonyms:

tax—tacks
tacked—tact
tax us—taxes

Other examples:

"SO-WHAT" SESSION: 3

Doubling of the consonants in spelling based on phonemic transcription:

When a suffix beginning with a vowel is added to a word, the consonant is doubled if a simple vowel sound precedes the suffix. It is not doubled if a diphthong precedes. (This rule applies only when symbols of phonemic transcription are used.) The vowel sound of o as in go must be represented by /ow/ (in the dialect of this entire unit) in order to make this rule apply without exception.

Samples for illustration of the doubling rule:

written	writing
betting	boating
cutting	recruiting
flubbed	fluting
planned	planed
lopped	loping
hugged	
scarred	scared
copped	coped
flattened	deflated

Worksheet V

So far we have been dealing with the phonemes of English which are called segmental because they are segments of speech. But we must also consider the suprasegmental phonemes, so called because they are imposed upon the segmental ones. We will call them stress (the emphasis given one syllable in contrast with another), pitch (the relative tone of voice) and juncture (pause or lack of pause). Since these three factors affect meaning, they too are phonemes.

STRESS

Within individual words we will consider three types of stress.

/ Primary stress

\ Mid stress

◡ Weak stress (usually not marked)

Example: $\overset{/}{\text{cun}}\overset{\smile}{\text{ning}}\overset{\backslash}{\text{ly}}$

Now let us see how stress is phonemic, that is, how it makes a difference in meaning.

Exercise 1

Place a primary stress mark over the syllable in each word that has the greatest stress.

	Noun	Verb
1.	subject	subject
2.	import	import
3.	convert	convert
4.	discharge	discharge
5	record	record
6.	rebel	rebel

Why is the stress shift in these word pairs phonemic? ________________

____

With groups of words we distinguish four levels of stress, as follows:

/ Primary stress

^ Secondary stress

\ Tertiary (third) stress

˘ Weak stress (usually not marked)

The word cònstĭtútiŏnăl shows all three levels of word stress which we mentioned previously, but when it becomes part of a phrase such as cònstĭtûtiŏnăl cŏnvéntiŏn, we hear four levels of stress within the group with a weakening to secondary of the original primary stress. Let us try a few more examples:

Exercise 2

Mark primary stress in the column of single words and both primary and secondary stress in the word groups. (Omit third and weak stresses.) The first one has been done for you.

1. Énglish	Ênglish lánguage
2. license	marriage license
3. scholastic	scholastic standing
4. arduous	arduous task
5. flimsy	flimsy excuse
6. pleasing	pleasing remark

The point of all this is that in English we associate various stress patterns with certain types of grammatical combinations. We will look at a few of these patterns and see how sometimes they are very important in distinguishing one meaning from another.

I. Compound nouns A compound noun is usually identified by the stress pattern / \. Examples: wátchtòwer, pórk chòp, clóse-ùp. The stress pattern identifies all these as compounds although the first is written as one word, the second as two words, and the third is hyphenated.

Exercise 3

Mark the compound noun pattern on the following:

1. hot rod
2. clothes closet
3. salt shaker
4. ballpoint
5. side street
6. by-pass
7. high school
8. tool shed
9. necktie
10. football

II. Modifier + noun This combination is usually identified by the stress pattern ^ /. Examples: sîck núrse, bâd bóy.

Exercise 4

Mark the stress pattern over the modifier-noun expressions:

1. dark horse
2. high brow
3. low land
4. long bow
5. white house

Summary: In the compound noun, the stress normally falls on the ________________ element of the compound.

In the modifier + noun sequence, the stress normally falls on the ________________ element of the two.

Exercise 5

Indicate the stress pattern in the same combination of words used first as modifier + noun and second as a compound word. The first one has been done for you.

	Modifier + noun	Compound
1.	$\overset{\wedge}{\text{dark}}\ \overset{/}{\text{room}}$	$\overset{/}{\text{dark}}\overset{\backslash}{\text{room}}$
2.	____________	____________
3.	____________	____________
4.	____________	____________
5.	____________	____________
6.	____________	____________
7.	____________	____________
8.	____________	____________
9.	____________	____________
10.	____________	____________

For each of the pairs above, write the different meanings which the different stress patterns produce.

III. Qualifier + adjective (or adverb) This combination is usually identified by the stress pattern ∧ / . Example: $\overset{\wedge}{\text{more}}\ \overset{/}{\text{effective}}$.

Exercise 6

Indicate the qualifier + adjective or adverb stress pattern in the following words:

1. more mature
2. too quiet
3. more helpful
4. somewhat hot
5. pretty humid
6. mighty lucky
7. very intriguing
8. quite versatile
9. rather subtle
10. really confused

IV. Verb + noun This combination is customarily identified by the stress pattern ∧ /. Example: He must $\overset{\wedge}{\text{wash}}$ $\overset{/}{\text{rags}}$ after cleaning windows.

Exercise 7

Indicate the stress patterns in the following sentences to show this verb+ noun object stress.

1. She is stewing hens for dinner.
2. The scouts fried chicken at the cook-out.
3. He is flying planes for a hobby.
4. The chef will roast beef on the spit.
5. The scouts flash lights in the woods.

V. Verb + adverb This combination is usually identified by the stress pattern ∧ /. Example: $\overset{\wedge}{\text{blow}}$ $\overset{/}{\text{out}}$.

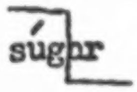
Exercise 8

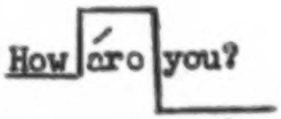
Indicate the stress pattern in the given sentences and label the pattern.

1. The show was a sell-out.
2. Did the gift shop sell out?
3. The drive-in was closed.
4. Did you drive in?
5. He always had a clever comeback.
6. I saw Jim come back.
7. Will he sing along with us?
8. Come join the singalong.

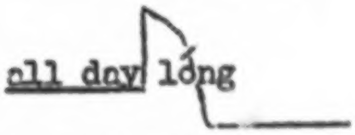
WORKSHEET VI--Marking Sentence Contours

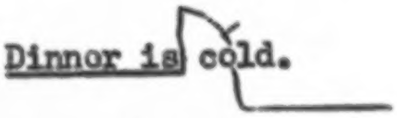
Let us agree that a line drawn at the base of the letters of a word (i.e., $\underline{\text{have}}$) indicates that the word is pronounced in a normal tone. A line above the word (i.e., $\overline{\text{sugar}}$) marks a high tone. A line some distance below the word (i.e., sugar) marks a low tone. Usually the movement from one tone to another takes place between syllables. To represent this, we will use a straight vertical line.



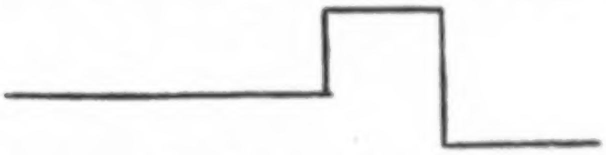


Sometimes, however, the voice slides from one tone to another while it is pronouncing a syllable. This frequently happens in a monosyllable. Such a movement within a syllable we will mark by a line curving up or down.

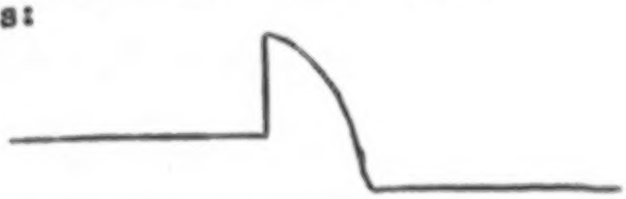

all day lóng


Dinner is cold.

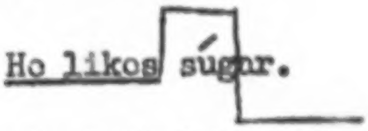
Correct intonation is most necessary at the end of a sentence. Here the voice most frequently rises above normal, then falls below normal. Thus, the most common English intonation pattern looks like this:

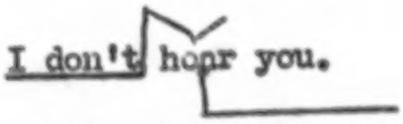


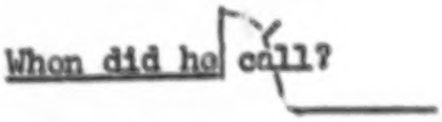
or this:



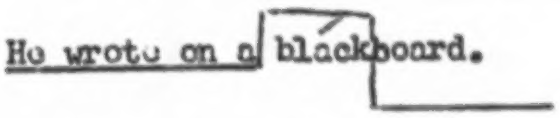
The important key to these patterns is the high level which usually accompanies primary stress. Thus, we can say that the high pitch coincides with the final sentence stress.

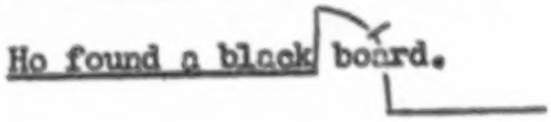

He likes súgar.


I don't hear you.

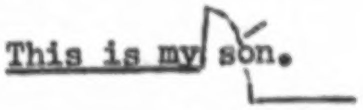

When did he call?

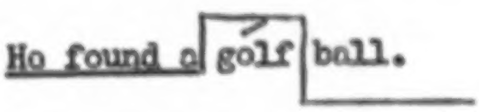
The fact that the high pitch usually coincides with final sentence stress enables us to distinguish between items like blackboard and black board.


He wrote on a blackboard.

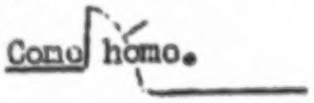

He found a black board.

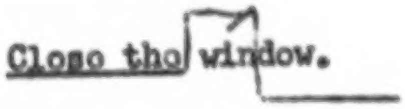
In English, rising-falling intonation is normally used at the end of (1) simple declarative sentences:


This is my son.


He found a golf ball.

---(2) Commands




Close the window.

---(3) Questions which begin with a question word: who, what, why, when, where, whom, whose:

What is the matter?   How are you feeling?   Why is he mad?

Mark the accents and intonation patterns on the following items:

1. He wants an apple.
2. I'd like a soda.
3. He bought a hot dog.
4. She ate a sandwich.
5. He has a wrist watch.
6. I'd like to come over.
7. She'd like to hear it.
8. I want to answer her.
9. I'm going home.
10. I'm going home Thursday.
11. He earned an "A."
12. He wants some soup.
13. Carol has a new car.

1 . What do you want?
15. Go to your room.
16. Get out of my sight.
17. When did you tell her?
18. Where's the grocery store?
19. Which books are the best?
20. Why did you take it?
21. Try to get the street cleaner.
22. Try to get the street-cleaner.
23. In Pasadena there's a playhouse.
24. Children like to play house.
25. The wrestler has a strong hold.
26. Gibraltar is a stronghold.

At the end of a sentence two types of intonation are most common: rising-falling, and rising. We have just seen how rising-falling intonation is used for statements, commands, and question-word questions. In English, rising intonation is used at the end of two kinds of questions:

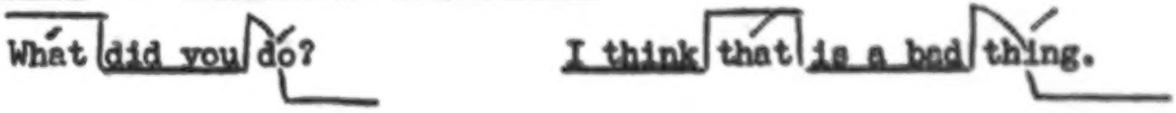
(1) It is used at the end of yes/no questions in statement form:

He's gone?   It's time to go?

(2) It is used at the end of yes/no questions in question form:

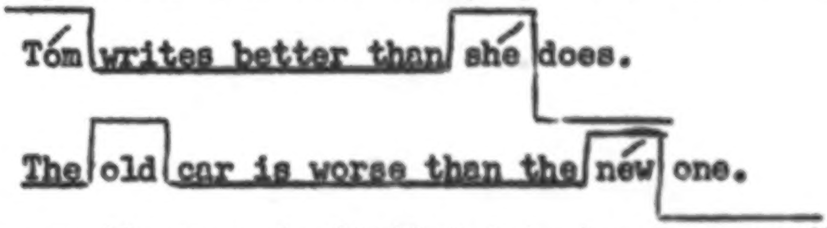
Are you there?   Do you see?

Rising intonation may also occur in a number of non-final positions in various kinds of utterances. Frequently, special attention is called to question words and demonstrative pronouns:



Whát did you dó? I think thát is a bad thíng.

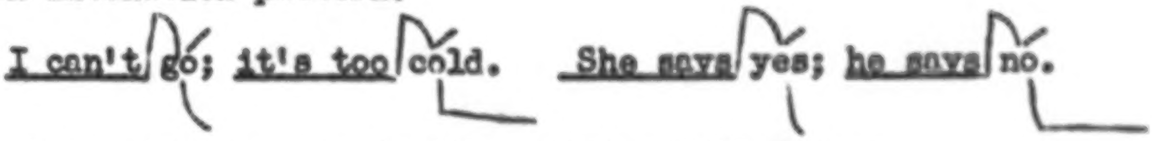
In comparisons and contrasts, special attention is called to both ideas:



Tóm writes better than shé does.

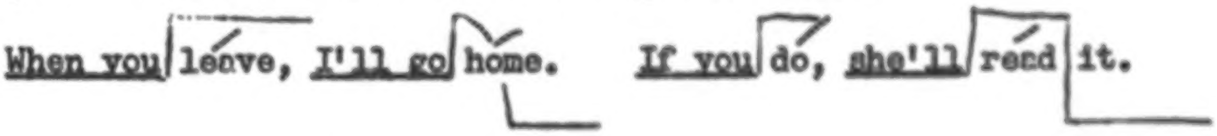
The old car is worse than the néw one.

When an utterance is divided into two or more thought groups, each group has its own intonation pattern.



I can't gó; it's too cóld. She says yés; he says nó.

Incomplete utterances end with a rising inflection:



When you léave, I'll go hóme. If you dó, she'll réad it.

Items in series have rising intonation in all but the last item; rising-falling intonation occurs in the last:

Exercise 2

Mark the stress and contour of each of the following:

1. Good morning, teacher. How are you?

2. If it rains, we'll call it off.

3. You'll agree with me, won't you?

4. Is the test on Monday or Tuesday?

5. We study reading, writing, and pronunciation.

6. Which syllable is accented?

7. I'm taking physics, chemistry, and German.

8. We're going to eat in Chicago. Where?

The Intonation Contours of Intervening Structures

For the teacher:

This unit is intended to assist with the punctuation of restrictive and non-restrictive clauses, interrupters, appositives, and other structures which intervene within the pattern of the sentence. Hereafter "intervening structure" (I.S.) is any grammatical structure which appears after any nominal headword or construction including a nominal headword, and before the verb or terminal. If two or more grammatical structures so appear, both the combination and the parts have to be considered as intervening structures. (A two-headed structure is one structure; there may be twin primary stresses in it.) We may represent this arrangement as follows:

A B
N I.S. V (any further pattern may occur)

N = any nominal headword
I.S. = intervening structure
V = verb
A = meeting point between N and I.S.
B = meeting point after I.S.

Observing that students often hear stress more readily than they do juncture, we wish to lead them to apply the following test, which is nearly universal (except for measured or emphatic speech):

When there is 1) a primary stress in the headword (or the headword construction)
AND 2) a primary stress in the following intervening structure as well,

there will be noticeable juncture between the two primary stresses (whether level, rising, or falling juncture depends on the speaker) and commas should be used to set off the entire intervening structure. On the other hand, a primary stress in only one of the two or in neither indicates that the intervening structure should NOT be set off.

In terms of the diagram above, A is the critical point; B is non-significant. If there is primary stress both in N and in I.S., there will be juncture at point A, the type of juncture depending on the speaker, and the I.S. requires setting off with commas. In chart arrangement, we have:

Pattern *with* commas

	Nominal	A	I.S.	B	V
I.	/	↗ → ↘	/	non-significant	/

Patterns *without* commas

	Nominal	A	I.S.	B	V
II.	/	+ →	ø	non-significant	/
III.	ø	+ →	/		/
IV.	ø	+ →	ø		/

(Where more than one possibility is listed under A, any one may appear.)

Examples:

		A		B	
I.	Bill $\overset{/}{\text{Jo}}$nes	,	our all-conference $\overset{/}{\text{tack}}$le	,	will receive the $\overset{/}{\text{tro}}$phy.
II.	The novel		that we $\overset{/}{\text{stu}}$died		was *Moby $\overset{/}{\text{Dick}}$*.
III.	George		without his $\overset{/}{\text{wife}}$		is like a different $\overset{/}{\text{per}}$son
IV.	The man		of the house		is $\overset{/}{\text{tired}}$.

The purpose in focusing attention upon point A is to avoid confusing students by making them think that punctuation should occur wherever they hear a pause. This, of course, is NOT true, and we want to avoid having a single comma inserted at point B, where juncture can often be heard even when there is none at point A.

As for method, it is suggested that the teacher read short sentences having one primary stress in a normal conversational manner. If possible, use a tape recorder at the same time so that no one can challenge a re-reading as being different. The students are asked to indicate what seems to them to be the primary stress in the sentence. In the sentences given below or similar ones, the class should try to come to some agreement on primary stress. If it is necessary, replay the sentence on tape or even move some students closer when they claim that they cannot hear the stress pattern. After this skill has been developed, then the class is ready to work with the same sentences with intervening structures inserted in them. For this work the teacher could write the constituents of example sentences on cards and attach them with snap clothespins to a cord stretched across the chalkboard. This should assist students to visualize the movement apart of the simple constituents of the sentence when an intervening structure is inserted. The class then decides whether or not to use the comma cards. A flannelboard could be similarly used.

Simple sentences for finding primary stress:

1. Terry crossed the street.
2. Bill Jones will receive a trophy.
3. Her sister is a teacher.
4. All the men were veterans.
5. Any boy needs a bicycle.

The same sentences with intervening structures:

1a. Terry, seeking to avoid a fight, crossed the street.
1b. Terry, when he saw his pals, crossed the street.
1c. Terry, a frequent jaywalker, crossed the street.

2a. Bill Jones, our team captain, will receive a trophy.
2b. Bill Jones, who won the tournament, will receive a trophy.

3a. Her sister, not her cousin, is a teacher.
3b. Her sister, a Vassar graduate, is a teacher.

4a. All the men seated at the speaker's table were veterans.
4b. All the men I met at the meeting were veterans.

5a. Any boy applying for this job needs a bicycle.
5b. Any boy, at least any big boy, needs a bicycle.

After students are familiar with this contour, they could be led to see that the same generalization will apply when the intervening structure occurs in sentence-final position.

Worksheet VII
"Restrictive" and "Non-restrictive" Sentence Elements—Their Punctuation

	A		B	
I. Bill Jones	,	our star tackle	,	received the trophy.
II. The novel		that we studied		was *Moby Dick*.
III. George		without his wife		is a different person.
IV. The man		of the house		is tired.

		A		B	
I.	/		/		/
II.			/		/
III.			/		/
IV.					/

Any boy	,	at least any big boy	,	needs a bicycle.
Any boy		applying for this job		needs a bicycle.
Terry	,	seeking to avoid a fight	,	crossed the street.
Terry	,	a frequent jaywalker	,	crossed the street.
All the men		seated at the table		were veterans.
George		running down the street		is a ludicrous sight.
A train		running down the street		will clear its own path.
Arthur	,	who dislikes work	,	is failing Latin.
Anyone		who dislikes work		may have trouble with Latin.

Name KEY

Unit Test on Phonemes

I. Following are some common English words written in phonemic transcription. Rewrite each one in standard English spelling.

1. /skwiyl/ squeal
2. /enčæntiŋ/ enchanting
3. /kwayətliy/ quietly
4. /əkwipmənt/ equipment
5. /rowziy/ rosy
6. /seynthud/ sainthood

II. The words below are intended to be nonsense words written in phonemic transcription. Pronounce each one to yourself and rewrite it in the way that seems to you most likely for "normal" English spelling. If two possibilities appear equally likely, both answers will be permitted. Number 1 has been done as an example for you.

1. /grayb/ gribe
2. /gleyn/ glane glain
3. /sneǰ/ snedge
4. /leyl/ lale
5. /snæf/ snaff

Teacher: See explanatory note about this question.

III. How many of the following words are minimal pairs phonemically? On the line after each pair, which are written in normal spelling, write yes if it is a minimal pair, no if it is not. Then put the phonemes which differ on the next section of the line.

Words	Minimal pair?	Phonemes of difference
dead debt	yes	/d/ /t/
laughed left	yes	/æ/ /e/
food foot	no	/uw/ /u/ and /d/ /t/
batch badge	yes	/č/ /ǰ/
thin then	no	/θ/ /ð/ + /i/ /e/

Name KEY - ALTERNATE FIRST PAGE

I. Following are some common English words written in phonemic transcription. Rewrite each one in its standard English spelling.

1. /naythud/ knighthood
2. /muws/ moose
3. /pležər/ pleasure
4. /šəkɔgo/ Chicago
5. /rəmeynd/ remained
6. /skwabəld/ squabbled

II. The words below are intended to be nonsense words written in phonemic transcription. Pronounce each one to yourself and rewrite it in the way that seems to you most likely for "normal" English spelling. If two possibilities appear equally likely, both answers will be permitted. Number 1 has been done as an example for you.

1. /grayb/ gribe
2. /prayl/ pryle pryal
3. /skuwf/ scoof
4. /sneǰ/ snedge
5. /snæf/ snaff
6. /niyp/ neep, neap, nepe

III. How many of the following words are minimal pairs phonemically? On the line after each pair of words, write yes if it is a minimal pair, no if it is not. Then put the phonemes which differ on the next section of the line.

Words	Minimal pair?	Phonemes of difference
dead debt	yes	/d/ /t/
laughed loft	yes	/æ/ /e/
foot food	no	/uw/ /u/ /t/ /d/
fasten fashion	yes	/s/ /š/
one win	yes	/ə/ /i/

IV. The phoneme /s/ is used to form the plurals of nouns which end with certain other phonemes. Name four phonemes which, when final in a noun, take /s/ to form the plural.

any four /θ/ /t/ /p/ /k/ /f/

What do these four phonemes have in common?

all voiceless

V. Think of some minimal pairs in which the only difference is a final theta or eth. If there is a shift in part of speech between the two words, what part of speech is the theta-ending word? noun

What part of speech is the eth-ending word? verb

VI. The following sentences contain words or word combinations that sound almost alike but mean something different. The meanings are kept distinct by differing intonations. Fill in the blanks in the statements describing the differences. Put your answers in the blanks at the right.

A. Mrs. Johnson went to the green house.
B. Mrs. Johnson went to the greenhouse.
In sentence A. there is greater stress on green than on house. 1. no

A B
No one will desert the army in the desert.
The syllable des has stronger stress in word A or B? 2. B

A B
Robin Redbreast has a red breast.
In A the stronger stress is on the syllable... 3. red

A B
We object to the object of this meeting.
In A the stronger stress is on the syllable... 4. ject

A. The girl from Alabama was a French student.
B. The girl from Paris was a French student.
In which sentence does the word French have the higher pitch? 5. A

In the sentence "The flag is red, white, and blue," what direction does the voice move during the word white? 6. up

During the word blue? 7. down

What type of phonemes has section VI of this test been concerned with?
8. suprasegmental

VII. Spell the following words properly:

din + ed dinned
plan + ed planned
hop + ing hopping
write + er writer

VIII. Punctuate the following sentences, if they need it.

1. The recording that he wanted is no longer available.
2. Advertising, which is essential to the economy, is a very competitive field.
3. The child playing on the lawn is my nephew.
4. A car having defective brakes is a hazard to its driver.
5. Her sister Joan, who lives near us in Tulsa, is now eighteen years old.
6. The girl boarding the bus is Janet Slocum.
7. Our baseball team, which is far better than last year's, plays a double-header Sunday.

IX. What is a phoneme?

A difference in sound which makes a difference in meaning.

X. No credit or penalty on this question--answer only if you have time.

Do you think you have learned anything worthwhile in the last three weeks or so in this unit? Could you say what?

Note to teachers about the transcription from phonemes of nonsense words:

When testing understanding of phonology, a teacher will find the transcription of nonsense words helpful. Such questions are brief, and yet their novelty tests the student's grasp of English. But they must be used carefully rather than mechanically.

Let us assume that the teacher uses the item /snaf/ with the direction to write the word in normal English spelling. Acceptable answers are snaff, snaph, snalf, but NOT snaf. No English words end in -af. The teacher can have the student verify this by reference to the vocabulary of rhymes in the dictionary.

For another example, take /snej/. In English this would be spelled snedge or possibly snege, but NOT snej. A student who tries to argue for snej as a normal English spelling does not understand what the teacher has been trying to explain about the English graphic system. He is likely to be a poor reader and speller. But this type of study and this type of question may be an additional device for the teacher beyond the others already used to try to bring such a student to greater language awareness.

In addition to the dictionary vocabulary of rhymes, the teacher is referred to Paul Roberts' Understanding English, Chapter 8, "How Do You Spell Ghoti?"

(Use later as a part of a semester examination to see how much of the unit had been retained.)

In the blank to the left, write in normal English spelling each word whose phonemic transcription appears below.

____________________ 1. /kliyn/

____________________ 2. /baks/

____________________ 3. /neyšən/

____________________ 4. /čəg/

____________________ 5. /θruw/

Are the following words minimal pairs? Place yes or no in each blank.

__________ 6. lacked lagged

__________ 7. proof prove

__________ 8. won one

__________ 9. then thin

__________ 10. tooth teethe

In the blanks below, list three of the eight pairs of voiced-voiceless consonants in English: Voiceless in the FIRST blank--voiced in the SECOND)

/____/ /____/ 11. first pair

/____/ /____/ 12. second pair

/____/ /____/ 13. third pair

In the blanks below, list three words in which the phoneme of stress ALONE is used to distinguish between the word as a noun and the same word as a verb.

____________________ 14. first such word

____________________ 15. second such word

____________________ 16. third such word

Decide whether the following sentences are properly punctuated. If they are, place a plus (+) on the line; if they are not, place a zero (0) on the line.

______ 17. The man, who takes care of that, isn't here now.

______ 18. The umpire, insisting his eyesight was excellent, declined to reverse his decision.

______ 19. Ambrose, who knew the meaning of the word, turned pale.

______ 20. The child, who answered the door, said her parents were out.

______ 21. We asked Mary, a home ec major, to plan the menu.

VIII. SUPPLEMENTARY MATERIALS

A. Exercise Materials

Exercises are optional and can be used independently of packaged units or plugged into units as desired.

VIII, A, 1.

An exercise illustrating the importance of segmental phonemes in the artistry of poetry:

Procedure: 1. Hand out the dittoed copies of Housman's "When I was One and Twenty" written in phonemic transcription, and ask the students to read the poem to themselves.

2. Then begin blackboard discussion by asking the students to look for groupings of similar sounds. They will probably begin with the rhyme words, and as students offer the groupings, the teacher can write these on the blackboard spacing them by lines of poetry and in the order of occurrence within the line. If the two stanzas are placed side by side, the parallel use of patterns and emphasis changes can be more easily observed by the students.

(A suggested continuation of the discussion from this point follows.)

3. Follow-up exercise

The students can be asked to handle in a similar way another poem in the section of literature being studied, or each row can be asked to handle a different poem and present their "discoveries" to the class on the following day after a five-minute compiling session in their small groups.

Detailed example of discussion procedure:

1. What groupings of similar sounds do you find?
   a) Are these rhyme words occurring at the end of lines?
   b) Are these alliteration or consonance or assonance?
   c) Do they combine end-words and words within the lines?

2. How many diphthongs per line do you find?
   a) Does the use of diphthongs put emphasis on a certain portion of the poem, and vice versa?
   b) Do the words which use diphthongs carry the main sense?--or do they seem to have a placement according to rhythm (i.e., beginning and ending of lines, within phrases, same position in two consecutive lines--parallelism of a kind, first half and second half, etc.)

      (Compare line 2-- wáy‿z mæ̆n séy
      with line 10-- sey ə---géyn
      --same pattern though different wording)

   c) Do the diphthongs carry the accented syllables?

3. How many two-syllable words are there?

   a) Where are they placed? Does this suggest anything about emphasis? about slow pacing? Is there a pattern?
   b) Do the two-syllable words contain diphthongs?

Findings:

1. The rhyme words run a pattern and are inter-linked with words within the line.

2. The diphthongs tend to appear on the words and in the lines which are to receive the emphasis.

3. The one-syllable words at the beginning of the stanzas make for a light, fast-moving tone in the first part of each stanza. The use of diphthongs indicates emphasis on sense, a slower-paced, heavier tone.

4. Key words are rhymed: rue, two-and twenty, true, true. Note that the /uw/ in the first stanza is prominent in occurrence but not in an accented position. In the second stanza it carries the key-word meaning and the accents.

5. The accented syllables frequently carry the diphthong; the notable exception is the two-syllable end-of-the-line rhyme words (exception: fancy).

Frəm ə Šrapšər læd —13 — A.E. HousMAN

hwen ay wəz wən æn twentiy
ay hərd ə wayz mæn sey
jiv krawnz æn pawnz æn giniyz
bət nat yər hart əwey
giv pərlz əwey ən ruwbiyz
bət kiyp yər fænsiy friy
bət ay wəz wən æn twentiy
now yuws tuw tɔk tuw miy

hwen ay wəz wən æn twentiy
ay hərd him sey əgeyn (British pronunciation)
ðə hart awt əv ðə buwzəm
wəz nevər givən in veyn
tiz peyd wið sayz ə plentiy
æn ay æm tuw æn twentiy
æn ow tiz truw tiz truw

Flawər in ðə kræniyd wɔl — ALFRED LORD TENNYSON

flawər in ðə kræniyd wɔl
ay plək yuw awt əv ðe kræniyz
ay howld yuw hiyr ruwt æn ɔl in may hænd
litəl flawər bət if ay kud ənderstænd
hwət yuw ar ruwt æn ɔl æn ɔl in ɔl
ay šud now hwət gɔd æn mæn iz

VIII, A, 2.

Using the Suprasegmental Phonemes to Aid the Slow Reader

Students who have mastered the skills of reading,(that is, phonetic word identification and pronunciation) but read slowly, word for word, usually have a problem of comprehension because they can not internally vocalize the sentence. The meaning of the sentence escapes the readers with this kind of problem because they do not hear the sentence in total. Reading word for word and hesitating, these students have a fragmented idea of what they read. These students need to be acquainted with the rhythm of reading the language, and to accomplish this, drill on intonation contours, pitch, stress and juncture is helpful. The method is slow, but it does help the students to move beyond the skill of reading into the art of comprehension which, after all, is the prime reason for reading.

The drill should begin with sentences that are fairly complex. (For obvious reasons short plays are ideal for the initial step.) The teacher should use sentences which present problems, such as those containing direct address, appositives, adverbial and participial phrases; these should be used to demonstrate the manner in which an ordinary speaker would say these sentences. Distortion and repetition of correct reading help the students to realize that pitch levels differ for the different readings. Following this, the students are then instructed in the method of marking the four pitch levels which forces them to search for the correct meaning and to listen carefully to the reading.

The terminals are introduced next; most students seem to have an intuitive understanding of these and quickly become aware that, while it is a common practice in speech, they have failed to transpose these signals to their reading. Students are instructed to anticipate sentence patterns. For example, the normal declarative and imperative sentences end with a pitch down (↓), while a rising pitch (↑) signals a question. Students find that in struggling with the problem of "proper reading" they are in actuality trying to understand what is being said. The tendency at this point is for students to begin to exaggerate; however, with practice and speed they return to more natural but improved reading.

The next instruction should be in marking the primary stresses as an introduction to marking the sentence contours; this, for the poor readers, seems to present a special difficulty since they do not read with the kind of rapidity in which the natural pattern would occur. To them, it appears that every second or third word is naturally stressed. When students read a sentence and give primary stress to each of the words, the teacher must draw on the student's natural speech pattern by having the students read the sentence as well as they can, then look up from the paper and "tell" the sentence to the class in a conversational tone. Students are asked to note the difference and are encouraged to comment on which reading clarifies the meaning. Sometimes a careful paraphrasing of the sentence is a clue to whether real comprehension has taken place. Students who are not reading orally have to be made aware that they must internally vocalize the sound in order to arrive at the sense of the sentence. While this does violence to the principles of speed reading, it does have great merit for the student who is unable to cope with comprehension while reading at a slower than average pace.

Marking sentence contours is the final step in the study; the poor reader frequently does not have the desirable eye movements necessary to precede the word being spoken and, therefore, to preview the kind of reading the sentence should have. Emphasizing anticipation of a pattern for the various sentence structures enables a student to gain the necessary confidence to succeed at the first reading or, if he fails, to have a method of attack with which he can approach a second reading.

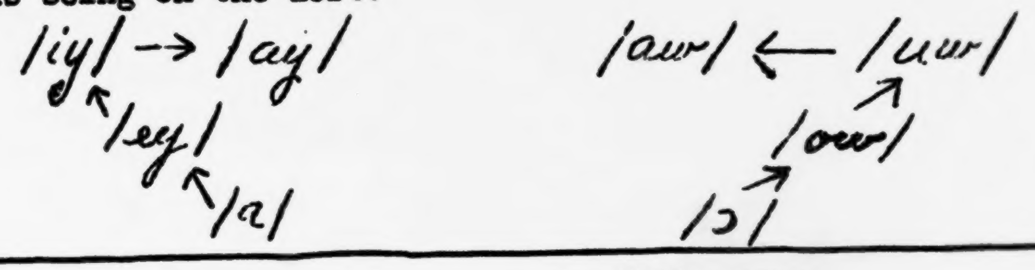
VIII, A, 3.

The Great Vowel Shift

(This note is intended as a cross-reference for classes which have studied or will study some of the history of the English language. Students who have studied phonology can understand this concept if the teacher wishes to present it. For further information the teacher is referred to any text on the history of the English language.)

Many changes occur in any living language. An interesting one in English known as the Great Vowel Shift occurred in the 14th, 15th, and 16th centuries. It explains why our long vowels are now pronounced differently from the same vowels in the Romance languages whereas they had originally been the same. We can tell from comparing Chaucer and Shakeseare, for example, that such changes did occur, but we cannot tell why.

During this period the vowels pronounced low in the mouth gradually moved upward; that is, the tongue moved upward in the mouth so that those long vowels which could be raised were raised and those which were already pronounced high in the mouth became diphthongs. We can chart this movement approximately using phonemic symbols and remembering that the front of the mouth is represented as being on the left:



	Chaucer	Shakespeare
name	/namə/	/neym/
meed	/meydə/	/miyd/
five	/fiyf/	/fayv/
goat	/gɔtə/	/gowt/
root	/rotə/	/ruwt/
down	/duwn/	/dawn/

This Great Vowel Shift is very important in understanding the use of the vowel symbols in modern English. Sound changes are independent of spelling changes. In the vocabulary of this unit, during the time between Chaucer and Shakespeare the vowel phonemes changed, but the vowel graphemes did not.

VIII, A, 4.

Intonation Pattern

Read the sentences aloud to your partner; then mark the intonation pattern on each.

1. ^{2}He wants an ^{3}apple.
2. I'd like a soda.
3. He bought a hot dog.
4. She ate the sandwich.
5. He had a wrist watch.
6. I'd like to come over.
7. She'd like to hear it.
8. I want to answer her.
9. Charlotte likes hominy grits.
10. He earned an "A."
11. I'll try to leave.
12. He wants some soup.
13. She can't see them.
14. Ava wants to know.
15. So she'll find out.
16. Carol has a new car.
17. Bill Jones sits on a flagpole every day.
18. The girl ran away to Australia.
19. The desk is made of mahogany.
20. The best team is the faculty.
21. Mr. Bye is good for 30 points.
22. Mr. Robertis is leading cheers for our side.
23. Mr. Gorham is our star guard.
24. Mr. Spalding towers over all the varsity.
25. ^{2}Aquin's varsity team is sure to ^{3}lose.

All are 2 - 3 - 1. These were at least started in class so the students could criticize each other's patterns.

VIII, A, 5.

STRESS AND INTONATION CONTOURS

I. Write the stress marks over the following words: (Indicate the levels by / (primary), ∧ (secondary), \ (tertiary), ◡ (weak).

1. Siam, Siamese
2. inject, injection
3. perfect (adj.), perfect (verb), perfection (noun)
4. nonsense, nonsensical
5. pious, impious
6. sacrilege, sacrilegious

II. In nouns and adjectives of two syllables in English, does the stress generally fall on the first or on the second syllable? Cite examples to support your statement.

III. In words of three syllables in English where does the primary stress generally fall? Cite examples to illustrate.

IV. Indicate the most probable intonation contour for the following groups by marking one of the examples.

a. They went home early.

Jim read his biography.

The poodle had a haircut.

The rain came in great gusts.

b. They secured ham, potatoes, and fruit.

The computer planned the programs, printed the schedules, and sorted the data.

The children played in the park, on the sidewalk, and in the trees.

The urchins were hungry, exhausted, and cold.

c. After the ballots were cast, the votes were counted.

He arrived early though he was not expected until noon.

Although Shaw wrote the play in 1900, it is very pertinent today.

d.	Where are the cookies?	Why isn't the cost included?
	What plans did they make?	Whom did you see?

e. Is all this possible?

Can Joe join us in the afternoon?

Does radar travel infinite distances?

f. Did they ask for the editor or his assistant?

Are you going with them or staying here?

g. This is the proper procedure, isn't it? (one way)

This is the proper procedure, isn't it? (another way)

h. Just as though he knew him.

i. Did he recognize him? Just as though he knew him.

j. He spoke to him just as though he knew him.

k. Just as though he knew him?

V. For a, b, and c, above, write a generalization of the pattern for statements.

For d, e, f, and g above, write a generalization which covers the patterns for questions. (Note the intended answers.)

For h, i, j, and k, explain the use of intonation contours as an aid for sentence recognition and/or sentence punctuation.

VIII, A, 6. SIBILANTS

/s/ (voiceless)
Distribution: initial--see; middle--assist; final--hats
Spelling: s-see; ss-pass; sc-scent; sch- schism; c-race; z-waltz; x-toxic; silent-aisle

/z/ (voiced)
Distribution: initial-zone; middle-dizzy; final-rose
Spelling: z-zest; zz-dizzy; s-raise; ss-dissolve; x-xylophone; ex-exist;

Distinguish /s/ and /z/ by placing the proper phoneme above the letter.

/s/ /z/
sip zip

Sue zoo advice advise seal zeal sink zinc race raze raise

rice rise Bruce bruise loose lose house(n) house(v) close(adj) close (v)

Exercise: Test your ability to distinguish /s/ from /z/ by placing the following words in the appropriate columns labeled /s/ and /z/.

advice advise design cheese lost loose resonate muscles circus zenith machine visualize thousand reception absence message miserable possess heroes essential treason pizza absolve close(adj) close(v)

USES OF THE LETTER -S

-s is used to form three (3) of the seven (7) English inflectional suffixes.
History: There were 307 inflectional suffixes in 905 AD--Anglo Saxon or Old English.

Inflection: A process of suffixation or infixation (in English) which adapts a word to a grammatical function without changing lexical meaning. (Francis, 593)

Suffix: An affix attached to the end of a word or a root.
An affix which follows a base. (Francis, 181)

1. -s means noun plural, and sounds /s/ or /z/ : cats/s/; dogs/z/; dishes/z/

2. -'s means noun singular possessive, and sounds /s/ or /z/:

   cat's/s/; dog's/z/; dish's/z/; book's/s/; boy's /z/; Charles's/z/

3. -s' means noun plural possessive, and sounds /s/ or /z/:

   cats'/s/; dogs' /z/; dishes' /z/; books' /s/; boys' /z/; Charleses' /z/

4. -s means possessive pronouns, and sounds /z/ and /s/:

   ours /z/; yours/z/; his/z/; hers/z/; theirs/z/; its/s/

5. -s means third person, singular, present tense of verbs, and sounds /s/ or /z/

sings /z/; wishes /z/; flirts /s/; thinks /s/; tries /z/; talks /s/
(The only irregular forms are do-does; have-has; say-says.)

*6. -'s means contraction of a noun or pronoun and a verb:
*This is not an inflectional suffix.

Examples: it's /s/ means "it is" (contrast its)
there's /z/ means "there is" (contrast theirs)
he's /z/ means "he is" or "he has"
she's /z/ means "she is" or "she has"

HISTORY OF -S as an inflectional suffix (Note the vowel shift from /a/ to /ɔ/ to /o.

	OE sing.	ME sing.	MnE sing.	OE pl.	ME pl.	MnE pl.
Nom.	stan	stan	stone	stanas	stanes	stones
Gen.	stanes	stanes	stone's	stana	stanes	stones'
Dat.	stane	stan	-----	stanum	stanes	-----
Acc.	stan	stan	-----	stanas	stanes	-----

The origin of the plural -s is quite obviously the ME plural which had "leveled" or simplified the more complex inflections of the OE. Besides the OE forms cited here, there were many other alternatives.

POSSESSIVE

The languages derived from Latin, the Romance languages, have dropped the genitive inflection, its function being performed by the function word of.

L. "pater Caroli" Charles's father
Fr. "le pere de Charles"
Sp. "el padre de Carlos"
It. "il padre di Carlo"

English has not lost its genitive inflection, but can use either construction: "Charles's father" or "the father of Charles"

Refer again to the above chart. Fill in the missing MnE forms. "Leveling" is again abvious.

Refer to the Prologue to Chaucer's Canterbury Tales, lines 47, 293-4, 556, and 700.

Ful worthy was he in his lordes were. (speaking of the Knight)
...have at his beddes heed twenty bookes (speaking of the Clerk's room at Oxford)
Reed as the brustles of a sowes erys (speaking of the red hairs in the Miller's wart)
...in a glas he hadde pigges bones (speaking of the Pardoner's relics)

Note the -es and the absence of the apostrophe. WHERE DID THE APOSTROPHE COME FROM? Shakespeare did not use it; modern printers have inserted it.
"Helens beauty" "natures truth" "Hyperions curls"
By Shakespeare's time, the early 17th c., people were largely unaware of the OE genitive and they searched for an "explanation" for the -s. Many decided it was

an abbreviated form of *his*, the possessive of it:

OE third person neuter singular pronoun

Nom.	*hit* became	ME *hit*	
Gen.	*his*	ME *his*	
Dat.	*him*	ME ---	
Acc.	*hit*	ME *hit*	

Note: These are only the most common forms

In the unstressed position the *h* sound weakened and by the beginning of the modern period *hit* had become *it* in the nominative and accusative. The possessive, however, was still *his*. This continued until the middle of the 17th century.

Shakespeare has Portia say: "How far that little candle throws *his* beams."
The King James Bible has: "If the salt lose *his* savor, wherewith shall it be salte

By the mid-17th century, people EXPLAINED the -s as the abbreviation of *his*, the apostrophe indicating the missing *hi*. So Ben Jonson wrote in his *Grammar*: 1692:

> "the Emperor, his court" should be "the Emperor's court" ..."thereby to avoid the gross Syntax of the *Pronoun* *his* joining with a Noun."

Thus what was felt to be a sign of the omitted letters *hi* became our common sign of the possessive. Eventually the use of it in the plural possessive followed.

At the same time there was a tendency to develop the form *its*. It was probably used colloquially for some time before it appeared in print in a 1597 book of madrigals. The King James Bible, however, does not use *its*. It uses *of it* or *thereof* in places where we would find *its* more natural.

> "Two cubits and a half was the length of it."
> "Two cubits was the length thereof."

Shakespeare sometimes uses plain *it* as a possessive:

> Horatio says of the ghost, "It lifted up *it* head."
> The fool in *King Lear* says, "The hedge-sparrow fed the cuckoo so long that it had *it* head bit off by *it* young."

Its became gradually accepted. When apostrophes became common, they were added to the personal pronouns as well as to nouns, with the result that before 1800 the present possessive, *its*, was written with an apostrophe, *it's*.

The contraction *it's* from *it is* is also a recent development. Earlier the contraction was usually *'tis*, and there were many similar forms: *'twas*, *to't*, *for't*, etc.

To the Teacher: This unit has not attempted to *teach* in the sense of mastering the proper use of the apostrophe. But, of course, ample drill material is available
It is hoped that the "study in depth" has furnished insights that stimulate interest. Maybe the knowledge will affect practice.

Further research: students can look up *won't* in the dictionary to account for the *o*.

VIII, A, 7.

In addition to the imbalance of phonemes and sound-spellings, we have the complication of words with silent letters:

doubt handkerchief sign pneumonia facts knee

EXERCISES

Compiling word lists of the different spellings of the same sound can be helpful. By analyzing these lists one can develop a sensitivity to the sound-spelling relationships of English.

1. Develop word lists for each of the spellings of the /k/ sound.
2. List 13 words in which the /b/ sound is spelled *bb*.
3. List three spellings and illustrations of the /t/ sound that are not listed on the phoneme-grapheme chart.
4. List three words which contain silent letters. (Stops)

SPELLING PROBLEMS

Much of the present difficulty in spelling has come from the fact that our pronunciation of words has changed while our alphabet has not. The word *knight* was pronounced as it was spelled in the Middle Ages. However, at the close of the Middle Ages discrepancies between sounds and their written symbols increased. In some instances letters were added, not because they were pronounced, but because they had appeared in the original forms as was the case with *doubt*. Here the letter *b* was added because it had originally appeared in the Latin word *dubitare*.

Helpful to remember that

k is silent before *n* unless *n* begins the next syllable as in *knot*, *acknowledge*

b is silent after *m* unless *m* begins the next syllable as in *dumb*, *lumber*

ed in final position is unreleased; so it is hard to hear; *used* g is silent before n or m in the same syllable as in gnat, diaphragm

gh makes a silent combination in many words, as in caught

EXERCISE

Indicate, by a double list, words which contain the silent letters listed above and words in which the same letters are pronounced due to their position in a different syllable.

	Silent	Sounded
Example:	knee	sickness

VIII, A, 8.

SOUND PATTERNS AND PUNCTUATION

Another way(though less definite) that stress patterns of individual words vary is in the need for contrast.

Example: Not Ben ánd Margaret, but Ben ór Margaret will help sell tickets.

EXERCISE 3. CONTRAST. Place primary stress marks over the appropriate words.

1. Tom is a better guard than Randy.
2. The weather is balmier in Bermuda than in Spain.
3. The band left yesterday, not today.
4. Her pearl is not genuine, but mine is.
5. Dick is taller than Dave.

EXERCISE 4. Write five original sentences in which you express contrast. Place primary stress marks over the appropriate words.

VIII, A, 9.

SUGGESTED EXERCISES FOR THE APPLICATION OF INTONATION CONTOURS TO THE PROBLEMS OF SENTENCE FRAGMENTS AND RUN-ON SENTENCES

(Designed for those students who have more difficulty than the average student.)

I. (Problems involving participial, prepositional, and infinitive phrases)

A. Practice sentence contours for simple sentence patterns:

1. We made the movie.
2. The plot was terrible.
3. The suspense was missing.
4. We sent it to Jane to re-do.

B. Practice sentence contours for simple sentence patterns with modifiers:

1. Jane and her cousins from Wisconsin rewrote the plot.
2. Bill, reading the story, exploded with laughter.
3. The little girl with the many boxes of berries was to take them to the jam maker.
4. Approaching the house bravely she went up the steps to ring the bell.
5. Suddenly she heard a car horn which seemed to have gone wild.

C. Note the intonation contours of the phrase groups within the sentence patterns in B.

D. Note the intonation contours when the phrase groups are used alone.

1. Is there any change in contour when the same group is used by itself?
2. Which ones (if any) assume that a question is asked?
3. Does the intonation contour change if a question is assumed and if this phrase is an answer?

E. In D, select the constructions which have subjects and verbs similar to sentence patterns that you know.

1. Do these phrases have full intonational contours like the regular sentence patterns?
2. Do these constructions have sense like regular sentence patterns? Is there any word or phrase which indicates that these constructions might be answering questions?
3. Are the questions necessary to the sense of the constructions in E? (See (2).) If questions are a requirement for sense, can we assume that this construction is complete?
4. What conclusions can we make about complete constructions and incomplete constructions of this type?

II. (Problems involving appositives and subordinate clauses in final position.)

A. Practice regular sentence contours for simple sentence patterns:

1. The little girl spilled the berries.
2. She was very hungry.
3. What would you do?
4. She rang the bell again and again.
5. She gave it a final twist.

B. Practice intonation contours for sentences containing appositives and subordinate clauses.

1. Suddenly she was holding the bell, a bunch of wheels and springs.
2. The horn blared on although the bell was no longer working.
3. Suddenly she froze as an icy hand clasped her neck.
4. It was her scream that she heard next.
5. It sounded like a clarion that should bring the neighbors to the hunt.
6. She found her feet glued to the porch when she tried to run.
7. The next moment there were new noises, the booming of the bells from the church belfry.
8. She tried to tell the world she needed help!

C. Separate the appositive and subordinate clause constructions:

1. Note the intonation contours for these fragments when they appear in isolation.
2. In order to make sense, what question must be understood in front of these constructions?
3. What statements can be made about the sense of these constructions when they appear in isolation?

III. (Run-on sentence problems)

A. Mark the intonation contours for the two parts of the sentences below:

1. I'm tired of noises, let's have some peace for a change.
2. The more I study these, the easier they become.
3. The water came up to the shore line, it was where the water usually cam
4. Last summer the water level was low, we had a wide sandy beach for a change.
5. The polliwogs needed more water, they had to move quickly into the stream.
6. The color of the mud flats was no longer gray, the crayfish had no protection from the would-be scientists.
7. Give me time, I'll catch them for you.
8. Examine them carefully, see if you can find their jaws.

B. How many primary stresses do you have in each part?

C. What differences in contours do you note between the two major parts?

D. According to intonation contours, which of the major parts is a complete construction? Whichis incomplete?

E. What word is used to join the two parts? What punctuation is necessary as a consequence?

VIII, A, 10.

EXERCISES FOR AFFRICATES:

Exercise: /č/ and /ǰ/. Minimal pairs.

chest, jest

etch, edge

chump, jump

batch, badge

choice, Joyce

Chester, jester

Exercise: The following words contain one of the affricates /č/ or /ǰ/. Indicate on the line the appropriate phonemic symbol.

_____1. Champion

_____2. reach

_____3. Japan

_____4. teacher

_____5. couch

_____6. chicken

_____7. grandeur

_____8. creature

_____9. budge

_____10. dodge

Exercise: Above each /č/ and /ǰ/ sound in the following paragraph, write the appropriate phonemic symbol.

"Which switch turns on the gym lights?" questioned Jim of Charley, the old soldier who was on a pension. "You educated chaps is all alike, "chortled Charley. "Just check the legend under the ledge; it's all pictured there for you, jumping right atcha," he exaggerated. "Don't be so righteous," growled Jim, conscious that Charley was egging him on. "Just now I'd like to cudgel the old goat," Jim jawed to himself as he set his chin.

Exercise: The following words contain one of the fricatives or one of the affricates. Write the appropriate phonemic symbol.

_____1. choice

_____2. teeth

_____3. rather

_____4. cough

_____5. rover

_____6. gem

_____7. phone

_____8. thick

_____9. peach

_____10. bridge

VIII, A, 11.

EXERCISES FOR FRICATIVES

Exercise: Minimal pairs, /f/ and /v/:

fife, five
safe, save
fast, vast
few, view
believe, belief

fine, vine
file, vile
feel, veal
fain, vain
relieve, relief

feign, vein
fear, veer
fat, vat
grieve, grief

Exercise: /f/ and /v/. Above each /f/ or /v/ sound in the following paragraph, write the correct phonemic symbol.

Phil the fluter fell off his plough one fine Friday. "I've had enough of these very fertile furrows," he roughly phonated as he followed his vile horse through the field.

Exercise: Minimal pairs, /θ/ and /ð/:

either, ether
wreath, wreathe

loath, loathe

Exercise: /θ/ and /ð/: Using the phonemic symbol, indicate the sound of each th in the following words:

thank, than
thistle, this

thimble, them
thug, thus

Exercise: /θ/ and /ð/: Test your ability to hear the voiced /ð/ and the voiceless /θ/ in these words by writing each word in the appropriate column. Include a column headed "Neither."

List: either, father, ether, mother, smooth, Thomas, author, then thick, them, thumb, bathe, wreathe, hotheaded, bath, wreath, soothe, thistle, thirst, myth, anthill, truth, mouthe, mouth, fifth, there

/θ/ /ð/

Exercise: /θ/ and /ð/. Above each /θ/ or /ð/ sound in the following paragraph, write the correct phonemic symbol.

Thomas and Theodore thumped Thad on his thatch-topped head.

"Thank you for those thumps," thundered Thad as he threw a box

of thyme at Thomas and Theodore.

Exercise: Minimal pairs for fricatives /f/, /v/, /θ/, and /ð/.

/f/ and /θ/:

frill, thrill

fret, threat

loaf, loath

fresh, thresh

/v/ and /ð/:

that, vat

thy, vie

/f/ and /ð/:

fuss, thus

laugher, lather

rife, writhe

heifer, heather

/θ/ and /v/:

thicker, vicar

moth, mauve

Exercise: /f/, /v/, /θ/, and /ð/: Above each /f/, /v/, /θ/, or /ð/ sound in the following paragraph, write the correct phonemic symbol.

The thoughtful thief laughed up his sleeve as he pilfered the

teeth of his fellow felon. "Leave those teeth there, you

oafish ruffian," thundered the victim of the fiendish theft.

"Off with the hands, you phony friend, or I'll file your name

with Thomas Thompson, the third highest officer in the force."

Exercise: /f/, /v/, /θ/, and /ð/: The following words contain one of the friction sounds. On the line write the phonemic symbol that represents the sound.

_____1. fry

_____2. vest

_____3. theater

_____4. proof

_____5. there

_____6. smoother

_____7. ever

_____8. weather

_____9. drift

_____10. strive

VIII, A, 12.

EXERCISE 1. SIBILANTS: Minimal pairs

Write the phonemes /s/ and /z/ above the letters which they represent. Example:

/s/ /z/
sip - zip

Sue, zoo

advice, advise

loose, lose

race, raze

Bruce, bruise

sink, zink

close(adj), close (v)

seal, zeal

house(n), house (v)

EXERCISE 2. SIBILANTS: Minimal pairs

Write the phonemes /š/ and /ž/ above the letters which they represent

asher azure

EXERCISE 3. SIBILANTS: Minimal pairs: Phonemes /s/ and /š/.

single, shingle

listen, fission (not minimal)

fasten, fashion

sip, ship

shore, sore

EXERCISE 4. MINIMAL PAIRS, Phonemes /z/ and /ž/.

bays, beige

ruse, rouge

cortez, cortege

EXERCISE 5. SIBILANTS

Each word in the following list contains one of the four sibilants, /s/, /z/, /š/, /ž/. On the line write the phonemic symbol that indicates the sound.

_____1. scone

_____2. wash

_____3. treasure

_____4. chaos

_____5. clothes

_____ _____6. thistle

_____7. blows

_____8. tissue

_____9. vision

_____10. chisel

EXERCISE 6. /s/ and /z/ sounds in words.

Test your ability to hear the /s/ and the /z/ sounds in these words by writing each word in the appropriate column. Write the appropriate sibilant sound in each word. Omit any words that have neither sound.

LIST: advice, advise, design, cheese, lost, loose, resonate, muscles, circus, zenith, machine, visualize, thousand, reception, absence, message, miserable, possess, heroes, essential, treason, pizza, absolve, close (adj), close (verb), yours.

/s/ /z/

EXERCISE 7. /š/ and /ž/ sounds in words.

Test your ability to hear the /š/ and /ž/ sounds in these words by writing each word in the appropriate column. Write the correct sibilant phoneme in each word. Omit any words that have neither sound.

LIST: assure, azure, fictitious, ambitious, vision, massage, horizontal, omission, rendezvous, visibility, exercise, insure, protege.

/š/ /ž/

EXERCISE 8. SIBILANTS - /s/, /š/, /z/, /ž/.

"Surely you know sumac and sugar are the only two words in English in which "ess" is pronounced as "essaitch," said Sam Smith in our buzz session in his garage.

"I certainly treasure that lesson," shouted Sean Zielinski, as he muzzled his vicious Schnauzer. "It is a pleasure to sit on your beige cement and hear words of wisdom from a schismatic scholar."

SPELLING PROBLEMS INVOLVING SIBILANTS

Verb-Noun combinations

advice - advise
device - devise
choice - choose - chosen
ceiling, sealing (homophones)
prophecy - prophesy

Confusion of -s, -c, -sc, -ss

accent, ascent, assent
council, counsel, consul
decent, descend (t), condescend
fascinate
possess
reminisce
scene
success
unnecessary

Homophones:
cite, sight, site
canvas, canvass
seller, cellar
cent, scent, sent
symbol, cymbal
desert (v), dessert (n)
confused with noun desert

Adjective-Verb combinations

loose, lose
close, close

Confusion of -s and -c

absence
presence
sense
suspense
census-consensus
supersede
precede
proceed
procedure
concede
recede
pretense
defense
process
conducive
offense
license
muscle

Words spelled -xc or -cc /ks/

excellent
excitable
accidentally
exhalation
exhibit
accede, accession
exercise
accept
except
accident
excusable

Confusion of /s/ and /z/

amaze
anxiety
criticism-
criticize
disease
dissolve
emphasize
exercise
facility
fantasy
magazine
doesn't
recognize
reservoir
surprise
symbolize
treason
realize-realism-realization
resonant
analysis-
analyze
paralysis-
paralyze

Confusion of /š/ and /ž/

vision
visualize
garage
beige
measure
mirage
cortege
azure
treasure
anxious
leisure
conscious
occasion
usually
concession
conscience
obsession
rouge

Words ending in -ce (pronounced /s/): noticeable, peaceable

VIII, A, 13.

Phoneme
/ŋ/

I. Initial Presentation

A. Phoneme /ŋ/ as in *bring*, *singing*, *slung*

B. Description--dorsovelar nasal

C. Reproduction--back of tongue against soft palate

D. Distribution--medial--*longer*
final--*during*, *ring*

II. Teacher Materials

A. Spelling:

ng--*singer*, *strength*

Note phonemic spelling /ŋg/ on such words as *elongate*, *longest*

Note phonemic spelling /ŋk/ for such words as *link*, *twinkle*

B. Exercise:

Insert the /ŋ/ or the variations noted above if they apply to the following words:

1. linger
2. sinking
3. lengthen
4. stringent
5. ice rink
6. stagnant
7. wringer
8. anger
9. rancor
10. fingering

Phoneme
/m/

I. Initial presentation

A. Identify the phoneme /m/ as in mice, man, am, crumb
B. Distinguish the sound from /n/ and /ŋ/, other nasals for which they can also "feel" the nasal vibrations.
C. Describe the physical production; it is a nasal, bilabial, continuant. Close your lips and hum.
D. Note the distribution of /m/

1. Initial--mine, class add others.
2. Medial--family, class add others.
3. Final--hum, class add others.
   Because the final /m/ may cause spelling problems, the teacher may want to include several from this list: emblem proclaim, kingdom, redeem, exam, bottom, problem, program, monogram, telegram, system, synonym.

II. Teacher Materials

A. Spelling variations
m--man, miller
mn--hymn, autumn, condemn, column, damn, solemn, mnemonia.
mb--lamb, crumb, dumb, climb, thumb, jamb, bomb, comb, numb, tomb
lm--psalm, calm, palm, balm, alms, qualms
mm-commit, accommodate

B. Spelling Problems

1. When the final m is preceded by a single vowel and the syllable is accented, double the final m before adding a suffix beginning with a vowel, or y.
   Example: cram/ming; hum/ming; program/ming
   monogram/med; telegram/med
   problem/matic; clam/my; Tom/my
2. The prefix in- becomes im- before an initial m: immature, immediate immeasurable
3. M is usually sounded; the n is usually silent in an mn combination. See the list in II.A. above.
   Note: mnemonic, shows an exception in the mn.
   Also, the suffix ment + a word ending in n, such as government and environment, has both consonants sounded.

C. Exercises
1. Write words from II.A. and II.B. in phonemic transcription on a separate sheet of paper; on the following day, spell these in correct graphemic transcription.
2. Using a dictionary, find other possible problem words involving m.
3. Underlined graphemes: transcribe them phonemically
   Supplying nothing camp semantics tramp
   treatment flamed committee command bimetallism
4. Can you? Kəm mərmərɪŋ mərmeydz həm himz tuw ðə saləm muwn.
   Try this: Milyənz ən milyənz mænəǰ ðə markəts əv mæmən.
5. Students compose a sentence in phonemic transcription, check it with one neighbor, and then give it to another neighbor to be transcribed.

VIII, A, 14.

Phoneme /r/

1. /r/ as in right, heron, core. This phoneme is called a semivowel because it is always made in conjunction with at least one vowel, rpaidly blending into the vowel sound which follows it, or the vowel sound rapidly blends into it.

2. It occurs in a word in initial, medial, or final position, arranged before, between, and after vowels or diphthongs.

   /r/ is pronounced in a variety of ways throughout the country. In eastern New England, eastern Canada, New York City, and the southern coastal states /r/ is pronounced only when it is immediately followed by a vowel, as in reach, rise, grows, boring, and Marion. Most Americans, however, pronounce /r/ whenever the grapheme appears in writing whether followed by a vowel or a consonant.

   In some parts of the country, particularly in parts of New England, there is a tendency to introduce an /r/ in such phrases as law and order, idea of, America is, and vanilla ice cream. This /r/, known as the intrusive /r/, is apparently inserted between words to maintain fluency when one word ends on a vowel and the next one begins with a vowel. President Kennedy's famous use of the phrase the Cuba incident /ðə kyubər insidənt/ is a case in point.

3. It is produced in three ways:

   The tongue-back /r/--the tongue is raised in back against the upper teeth, and the front of the tongue is sloped downward, with the tip of the tongue drawn slightly back. The lips are often somewhat rounded. This is the most common way the /r/ is made in general American dialect.

   The tongue-tip /r/--the back of the tongue is raised against the upper teeth, and the tip of the tongue is turned upward and drawn back, nearly touching the back of the gum ridge. It is relatively easy to make a trilled /r/ from this position, by pressing it against the gum ridge as the air is forced over the tip of the tongue.

   The friction /r/--the tip of the tongue is placed close to but not touching the gum ridge. When air is forced over the tongue tip, a friction occurs. It is a voiced sound in initial position, but may be voiceless after a voiceless sound (tree, three). It is most likely to be produced in American speakers after tongue-tip consonants such as /t/, /d/, and /θ/.

4. Spelling--r as in rim; rh as in rhythm; rr as in merry; re as in here;

5. Exercises--

   a. In some of the following sentences note the conjoining vowel or vowels that are linked to the /r/ and express that link phonemically(in Harrison, /ær/ and /ri/). Note the blend of the vowel and the semivowel /r/.

   b. Read several passages to yourself and determine whether you use the tongue-tip /r/ or the tongue-back /r/ when you speak. Also look for places where the frictic /r/ might be used and determine if you normally use it yourself. What is the effect if you try to sustain tongue contact with your gum ridge as the air passes over the tongue-tip?

   c. Look for places in the passages where you could introduce an intrusive /r/ and try reading the passages that way. How can you explain that the intrusive /r/ is not widely prevalent in American English?

1. Harrigan boasted of his Irish breeding and his proud name.
2. The graceless criminal broke out of the brig.
3. Nitrogen is used freely as a fertilizer.
4. The fearful lover did not know whether to bring his darling flowers or a fragrant perfume.
5. Random thoughts do not necessarily produce reasonable free verse.
6. The real estate broker exercised no scruples when he appropriated the poor widow's property.
7. The rustle of crisp red leaves was carried by the autumn breeze.
8. The air we breathe contains more nitrogen than oxygen.
9. The growling mongrel was tested for rabies.
10. Three policemen broke up the unruly rally.
11. Many foreign-born persons have difficulty in pronouncing /r/ sounds.
12. For reasons not always clear, persons named Harry are reputed to be mirthful people.
13. Though many have inquired, we have not learned the answer to "Who threw the overalls in Mrs. Murphey's chowder?"
14. More theories die than survive their theorists.
15. Theresa and Rose wanted to marry Fred and Robert, and they hoped that there would be no need to tarry.
16. Long-range weather forecasts are becoming increasingly accurate.

Practice pronunciation with the following minimal pairs. Add comparable examples of minimal pairs to the right hand column.

/r/	/l/
rush	lush
bread	bled
wrong	long
rain	lane
grow	glow
brand	bland
river	liver
fruit	flute
free	flee
rope	lope
right	light
rip	lip

Compare the sound of the /r/ in each of the three positions noted to find differences in the sounds as the position changes. Are these differences easy to identify? Do they suggest a change in meaning?

beginning	middle	end
read	arrest	star
rest	arise	floor
remain	errand	clear
room	foreign	care
right	hard	more

/ər/

1. /ər/ as in urbane, learn, fur. This sound is called the "r-colored vowel" because the /ə/ blends almost immediately into the /r/ sound.

2. It occurs in the word in initial, medial, or final position and in both the stressed and unstressed position. (stirring, mister,)

3. The sound begins with the articulators relaxed for the sound of the unstressed vowel /ə/, and then the back of the tongue glides up against the upper teeth as the front of the tongue slopes downward with the tip drawn slightly back. The final sound after these simultaneous changes is /r/.

4. Spelling—er as in her; ere as in were; ir as in bird; err as in err; irr as in whirr; eur as in amateur; ur as in nurse; yrrh as in myrrh, urr as in burr; or as in word; our as in courage; yr as in martyr; rr as in purring; ear as in learn; orr as in corrupt; ar as in liar

5. Exercises—The teacher could read the following sentences to the class and have the students write them out in grapheme spelling, putting an /ər/ phoneme above the appropriate syllables or the sentences could be prepared on ditto so that the students could mark the /ər/ on a copy of the sentences.

The customer was terse but the merchant far from taciturn.

Myrtle needed little urging to marry Earl.

A bird in the hand is worth a good deal on earth.

Earnest did not bestir himself to avert the falling urn.

The curtain fell and the rehearsal was adjourned.

Merton was disturbingly discursive throughout the excursion.

"Early to rise" has a happier ending for the bird than for the worm.

Few girls need to be urged to wear ermine.

Baker's brother was a drummer.

The driver kept murmuring about the weather.

VIII, A, 15.

Exercises to distinguish /i/ from /iy/. Notice the "feel" of each vowel.

sit - seat
bit - beat
did - deed
lid - lead
rid - read
bid - bead
sill - seal
mid - mead
will - weal
pill - peal
fit - feet
kill - keel
fill - feel
wit - wheat
hid - heed

Exercises to distinguish /i/ from /u/. Notice the movement from front to back.

sit - soot
pill - pull
hid - hood
pit - put
women - woman
hick - hook
fill - full
nick - nook
kid - could
kick - cook
Schick - shook
mere - moor
lick - look
tick - took
rick - rook

Exercises to distinguish /u/ from /uw/. Notice the glide and rounding.

soot - suit
could - cooed
full - fool
wood - wooed
hood - hood(lum)
should - shoed
pull - pool

Exercise for phonemic transcription of /i/ and /iy/.

"Why did Bill build his lean-to on the quay?" interrogated the women.

"Because it suited him to build here," replied Jimmy from the ravine as he sighted some people through his sieve, busily but neatly. "He's been keen to see Phoenix the eagle fly at Caesar the beagle for a year."

"I believe you; you've never deceived me," opined Myra, a rhythmic woman.

Exercise for phonemic transcription of /u/ and /uw/.

"Who took my tools?" growled Lewis the ghoul.

"Some woman put them in your suitcase near the new building by the sluice," muttered Sue the Sioux. You'd have thought she was a hooded hoodlum. You should have seen the way she shooed that foolish ewe from the fruit and pushed your tools into an already full pool of glue."

VIII, A, 16.

/ə/

1. /ə/, as in about, but, sofa. The symbol representing the sound is called the "schwa."

2. /ə/ occurs in the word in the initial, medial, or final position and in both stressed and unstressed syllables. Its most common occurrence is in all unstressed vowels.

   These unstressed syllables are caused by two conditions: (1) the contrast with the stressed syllable(s) in a word and (2) the contrast with the stressed syllable(s) in a phrase or thought group. The unstressing of the word or syllable is a matter of established patterns of pronunciation or dialect (compare British /ləbɔ́rətɔry/ with the American /lǽbrətɔry/); the unstressing in a phrase is determined by the speaker's idea (compare /ar yə kə́miŋ/ with /ar yúw kəmiŋ/).

   Such words as prepositions, articles, auxiliary verbs, conjunctions, and pronouns are ordinarily unstressed in a thought group (compare /kæn/ with /ay kən gow/). Some words have more than one unstressed form. The conjunction and and the article the are common examples. And is likely to be pronounced one way before a vowel (he and I) as /hiy ænd ay/ and another before a consonant (Jack and Jill as /jæk ən jil/). The has two unstressed forms, /ði/ before a vowel and /ðə/ before a consonant.

   In unstressed forms, an initial /h/ may be droppd before a vowel or a consonant. For instance, Stop him would be pronounced /stáp im/ or /stáp əm/. The h words his, her, he, have, and has would get similar treatment in unstressed syllables. Other commonly unstressed words include of, she, me, from, to, my, was, as, but, for, or, you, are, shall, would, should, a, an, them, at, I, some.

3. As the sound is produced, the tongue, jaw, and throat are relaxed. The sound is produced in the throat without apparent articulation above the throat. This sound could be described as a "gruntle": poke yourself in the stomach hard enough to produce an involuntary cry, and that sound, without the exclamatory quality, should be a /ə/or close to it.

4. Spelling--a as in alone; ae as in Michael; ai as in mountain; e as in enemy; ei as in mullein; eo as in pigeon; i as in easily; eou as in courageous; ia as in parliament; o as in gallop; oi as in porpoise; ou as in curious; u as in cut; y as in Pennsylvania or analysis.

5. Exercises--

From dictation write out the following words, phrases, and clauses. (The person doing the dictating should be careful to preserve the normally unstressed vowel in each passage.) Over each unstressed vowel write the phoneme /ə/ or /i/, whichever you hear.

Lóndon
fáctory
grammar
detain
division

expérience
distance
letter
careless
greatly

jealous
garment
exíst
impression

foreigner
fínally
ígnorance
gradual

glad to go
as I was saying
as far as possible
the end of the road
a long story

They are free.
Buy a book for Jane.
Give him a ticket.
We walked from school to schoo.

Call them.
Wood and coal are used for fuel.
the books that are lost
seeing them there

telling him the joke
either my sister or I
the apples in the basket
food and drink

He said he would come, but he didn't keep his promise.

She gave them a choice of black or green.

I should think he would be glad to go.

The sermon was short and well delivered.

We met her at the station.

VIII, B.

DISCUSSION QUESTIONS

This type of unit should not consist of exercises alone. The subject of English phonology lends itself to much interesting discussion. A few discussion questions are suggested here. None is essential to the unit, and there is no sequential order.

1. How can a knowledge of suprasegmental phonemes help one to read poetry with greater appreciation (Possible example-- e. e. cummings "anyone lived in a pretty how town" However, any poetry could be used.)

2. Should the English alphabet be reformed and enlarged? (Discussion of Shaw's bequest for this purpose, the ITA, etc.)

3. What factors lead to speech dialects? Are these dialects reflected in spelling? Why or why not? Do these dialects contribute to spelling errors?

4. Is the current trend toward greater standardization or greater diversity in English speech? What factors are operating here? Do you believe this is a good or bad trend? Why?

5. Have you ever heard someone pronounce each word correctly and yet read badly--very badly? What was wrong? Why?

6. Why do we put so much emphasis on correct spelling? Is it really important? (If students have read Sarah Kemble Knight's Journal in their English III anthology, they should be asked how they liked her spelling.)

7. If there are French students in the class, ask them to explain the difference in stress between a few cognate words in French and in English (gouvernement menagerie, representation, etc.) Also a few complete sentences could show the class the difference in sentence sound pattern.

8. If there are students of a foreign language in the class, ask them to pronounce the alphabet in the foreign language. The difference in the names of the letters, especially in continental values of the vowels, will undoubtedly surprise many. This exercise can be broadening for monolingual students.

9. If a student wishes to tape the utterances of a two-year-old, the class can distinguish the English and non-English phonemes. (Presumably, children at two years babble only in phonemes important to their native language.)

VIII

C. SUPPLEMENTARY TESTS which can be used by the teacher in addition to tests accompanying phonology teaching packets

VIII, C, 1.

Write the numbers indicated in phonemic transcription.

1. __________ 4. __________ 7. __________ 10. __________

2. __________ 5. __________ 8. __________ 11. __________

3. __________ 6. __________ 9. __________ 12. __________

Spell these words correctly.

1. /wustəršir/ __________ 6. /weðər/ __________

2. /kəntrolər/ __________ 7. /briyð/ __________

3. /braegərd/ __________ 8. /faloiŋ/ __________

4. /kiy/ or /kwey/ __________ 9. /əkyuwt/ __________

5. /vərčuw/ __________ 10. /sərtən/ __________

Explain how these utterances differ in meaning.

$$\text{1. Will you have }\overset{2\ \ 3}{\text{beef}}\nearrow\overset{2\ 3}{\text{or liver}}\ \overset{1}{\text{now}}\ \overset{1}{\swarrow}$$
____

2. Will you have beef or liver now ↗ __________

Mark the intonation patterns of pitch and juncture.

1. Why are you doing that

2. Please open the window

3. If he makes another touchdown he will lead his team to the championship

VIII, C, 2.

SEGMENTAL PHONEME TEST Name (in phonemic symbols, please)________________

I. Transcribe the following words into English:

1. nat not
2. bləd blood
3. čayld child
4. θisəl thistle
5. bowt boat
6. əbawt about
7. bəbəl bubble
8. rediynes readiness
9. biytwiyn between
10. iŋgliš English

II. Transcribe the following words into phonemic symbols:

1. cringe /krinǰ/
2. ski /ski/
3. thing /ðayŋ/
4. jug /ǰəg/
5. sung /səŋ/
6. cupid /kyuwpəd/
7. fission /fišən/
8. fishing /fišiyŋ/
9. missile /misəl/
10. Thomas /taməs/

III. If the following pairs of words are minimal pairs, write "M" in the first column; if they are not, write "O". If they are minimal pairs, write the phonemes which differentiate them in the second column.

1. feel - veal	M	/f/ /v/	6. chump - jump	M	/č/ /ǰ/
2. dead - debt	M	/d/ /t/	7. shard - chard	M	/š/ /č/
3. said - shed	M	/s/ /š/	8. pick - pig	M	/k/ /g/
4. trouble - double	O		9. rush - rust	O	
5. breath - breathe	O		10. glamour - grammar	M	/l/ /r/

IV. The following are nonsense words in phonemic symbols.
Rewrite them in a common English spelling:

1. /frič/ fritch - frich
2. /spliynk/ splink
3. /sænj/ sange
4. /nul/ null- nool
5. /θruwk/ throok - thruke
6. /ðimbəl/ thimble
7. /klowf/ clofe - cloaf
8. /stroym/ strame - straim
9. /growk/ groke - groake
10. /kleyd/ clade - klade

V. Some of the following phonemic combinations are possible in English, while others are not. If the combination can be pronounced as it is written, write "C" in the column after the symbols; if it cannot be pronounced as it is written, change one phoneme only to make the word "English." Rewrite the pronounceable word.

1. /ræpd/ /ræpt/
2. /rabt/ /rabd/
3. /kikt/ kicked
4. /læfd/ /læft/
5. /livd/ lived
6. /liyvz/ leaves
7. /læfz/ /læfs/
8. /loft/ left
9. /reyjd/ raged
10. /boygt/ /boygd/

VI. Write the plurals of the following words in phonemic symbols:

1. witch /wičəz/
2. hat /hæts/
3. boy /boyz/
4. buzz /bəzəz/
5. cage /keyǰəz/
6. stick /stiks/

VII. Add -ing to the following words:

1. pin pinning
2. pine pining
3. win winning
4. wine wining
5. dine dining
6. hop hopping
7. hope hoping
8. rob robbing
9. robe robing
10. stop stopping
11. wad wadding
12. wade wading
13. strip stripping
14. stripe striping
15. home homing
16. hum humming

VIII, C, 3. Phonemics Test Name(in phonemic script, please)________________

Transcribe the following words into English:

1. /nat/ not
2. /friyz/ freeze
3. /šud/ " should
4. /krəš/ crush
5. /trəbəl/ trouble
6. /fæšən/ fashion
7. /fiziks/ physics
8. /jiyamətriy/ geometry
9. /lɔngər/ longer
10. /θæč/ thatch

Transcribe the following words into phonemic symbols:

1. charge /čarǰ/
2. knee /niy/
3. shush /šəš/
4. stitch /stič/
5. pure /pyur/
6. poor /pur/
7. moose /muws/
8. mouse /maws/
9. news /nyuw·z/
10. answer /ænsər/

If the following pairs of words are minimal pairs, write "M" in the first column; if they are not, write "O" If they are minimal pairs, write the phoneme in the second word which differentiates them.

1. meal - keel M /k/
2. toot - doubt O ___
3. shed - shade M /ey/
4. thimble - nimble M /n/
5. mouth (n) - mouth (v) M /ð
6. thump - dump M /d/
7. share - chair M /č/
8. lame - lamb M /æ/
9. truth - soothe O ___
10. food - foot O ___

The following are nonsense words in phonemic symbols. Rewrite them in commonest English spelling.

1. /vat/ vot
2. /præč/ pratch
3. /nəz/ nuzz
4. /kyuwn/ kune
5. /niyp/ neap - nepe
neep
6. /kwayk/ kwike, quike
7. /dreθ/ dreath - eth
8. /slawnj/ slounge
9. /θrəjəs/ thrudges
10. /klaynd/ clined

VIII, C, 4.

Some of the following words are pronounceable in English; others are not. If the word can be pronounced as it is now written, rewrite it in English; if it cannot be pronounced as now written, underline the phoneme which makes it unpronounceable and write the word in phonemics with the letter which would make it pronounceable.

Example: /ripd/ cannot be pronounced as written; it can be pronounced if it if changed to/ript/.

1. /wipd/ /wipt/
2. /rowbd/ robed
3. /likt/ licked
4. /lefd/ /left/
5. /layvs/ /layvz/
6. /lowfz/ /lowfs/
7. /peyntd/ /peyntəd/
8. /rigd/ rigged
9. /ičt/ itched
10. /bəzt/ /bəzd/

On what basis did you make the above changes? voiced-voiceless pairings

Write the plurals of the following words in phonemic symbols:

1. match /mæčəz/
2. wit /wits/
3. boy /boyz/
4. fuzz /fəzəz/
5. rage /reyjəz/
6. stick /stiks/
7. pad /pædz/

Add -ing to the following:

1. lop ping
2. rob~~e~~ ing
3. win ning
4. pul~~e~~ ing
5. pull ing
6. pok~~e~~ ing
7. pick ing
8. snip~~e~~ ing
9. snip ping
10. hem ming
11. loop ing
12. rak~~e~~ ing
13. din~~e~~ ing
14. writ~~e~~ ing
15. stop ping
16. beat ing
17. seek ing
18. boat ing

On what basis did you decide to double the consonant? simple vowel or diphthong

VIII, C, 5.

Mark the primary stress of the underlined words in the following sentences:

1. His guilty look was a dead *gíve away*.

2. He wants to *give awáy* his Honda.

3. If you *hold óut* your hand, I'll give you some candy.

4. After all the others had given in, Joe was still a *hóldout*.

5. His greatest dream is to *sail bóats*.

6. His greatest dream is to own *sáilboats*.

7. The jay is a *blue bírd*.

8. The *blúebird* is not a jay.

9. That girl from Paris is a *French stúdent*.

10. The girl studying French is a *Frénch student*.

Answer this only if you have time. As you know, this material is still in the experimental stage. You can be of help to a number of teachers if you comment intelligently on such questions as the following: What have you learned that you did not know before? In what way has this material made the structure of the English language clearer to you? Can you see any practical application of the material? Make suggestions for other ways in which the material might be taught, etc.

VIII, D.

Motivational and Instructional Material

The following procedures are not merely for kicks; they are effective means of teaching important concepts as well as being interesting in themselves because of their novelty.

1. "Play" intonation contours on a slide whistle or a kazoo. This technique can be used in many ways: 1. At the beginning of the suprasegmentals; 2. To demonstrate differences in meaning depending on intonation contours alone. (Play the same sentence with different patterns to show variation in emotion, etc.) ; 3. As part of a review before a test, give the students a page of sentences, again with some duplication of wording, play the contours, and ask the students to mark the contours; 4. Play lines of poetry to find the best reading.
2. Make tapes at one speed, and play them at one-half that speed. This has the effect of abstracting the contour by blurring the words beyond distinction, thus isolating the contour, as does the slide whistle technique. The tape method is more sophisticated, and more technically demanding.
3. Ask students who have access to little children (at the babbling age) to record a fairly long period of babbling. Play the recordings in class for the students to distinguish distinct phonemes. This can be a very interesting session leading to speculation about the origin of speech, the complexity of language learning, the ease with which man masters this complexity. Students have a new respect for their own linguistic achievement. If there are any speakers or stúdents of foreign languages, they may add to the interest by identifying phonemes of a foreign language.

(I read somewhere that by the age of two years, a child has screened out of his babbling vocabulary all sounds not a part of his native tongue.)

4. Phonemic Word Game--Exchange a word or several common words for others and then try to carry on a normal conversation, e.g., "table" for "chair" or "is" for "can." Then substitute phonemic minimal pairs in conversation, and note the multiplied opportunities for more significant confusion, e.g., "pin" for "been" or "bin." In the first part of this exercise students become aware of the importance of context in our understanding of single words. In the second part, the significance of the phoneme is emphasized. Such simple exercises can heighten interest in playing with words.
5. Have students construct "Minimal sets," groups of words which can vary as the minimal pairs do. Ex.: pat, pet, pit, pot, put; pale, peel, pile, pole, pule; pool; pan, pen, pin, (pon), pun; mate, meat, mite, moat, moot, mute. This can become a running game; it provokes interest in words for themselves. Informal competition develops with students challenging each other's discoveries.
6. Phonemic anagrams--Begin with a small word, and have students build it up by adding one phoneme at a time, each time obtaining another word. Ex.: at--eat--heat--heath--sheath--sheathed. This makes them aware of the semantic importance of the phonemes.
7. Experiment--Many students have already tried this out for fun. When speaking to a young child or a pet, reverse the ordinary combinations of vocabulary and intonation. E.g., say "bad boy" in soothing tones and "good boy" in annoyed tones. Have the students report on the reaction. Nonsense words work well, too.
8. A variation of the "rabbit habit" of a few years ago--What would a linguist utter as he hit his head on a timber in the basement? A lowbeam phoneme.

9. "Morph-morphs"--What happened to the wife who arrived too late to meet her husband? She missed 'er mister.

10. Have a student put a joke in phonemic script on the blackboard each day before class.

11. Have students make up examples of the "rabbit habit" using names of classmates and writing them in phonemic script.

12. Fun-game with minimal pairs or riddles to facilitate the reading of phonemic transcription:

The purpose of this game is to provide practice in reading and thinking in terms of phonemic transcription. The teacher can quickly make up a few items such as the following which are pertinent to the names of students in any particular class. These can be on three-by-five cards which are circulated among the students; students can make them up as an exercise; dittoed copies of a list could be compiled.

Minimal pairs: (to be written in segmental phonemics) (Answers are omitted.)

1. How would a sailor greet Roy? (ahoy--Roy)
2. What would one thief say to another when he saw Bob? (Let's rob Bob.)
3. What would you yell to your pool mates when you saw Dave floundering in the water? (Save Dave!)
4. What would you say to Mark if you wanted him to listen (especially after studying Shakespeare)? (Hark, Mark!)
5. What would a boy say to another boy who wanted to avoid the draft--upon seeing Sheri? (Marry Sheri!)
6. What would you say to Larry if you wanted him to wait? (Tarry, Larry!)

Riddles: (to be written in segmental phonemics) (These involve the last names of students in the class.)

1. Why do people always want Don around? (They always want Moore.)
2. How does Kathy always answer questions? (Wisely)
3. Why would you lose a wrestling match with Russ? (He would get a Holt on you.)

VIII, D, 13.

WHAT MAKES ENGLISH ENGLISH?

Exercise I. Part 1. In the first space after each group of words below write **E** if it is English, **N** if it is not English, and **P** if it is partly English.

1. 2.

1. ʽαππι βερθδη. ____ ____
2. The equuses curred per the bonumest castellum. ____ ____
3. L'hiver est froid. ____ ____
4. The boy ate the apple. ____ ____
5. On the map Rome and the provinces of Rome we see. ____ ____
6. apple ate The the boy. ____ ____
7. Some murkles, while riffling on the smork, baskered a krimb, and were snutchoned by the arkle lither. ____ ____
8. Three boy eat three apple yesterday. ____ ____
9. This is his hat. ____ ____
10. Roy ate apple. ____ ____

Part 2. Now listen as I read the word groups. If you want to change your answer, indicate the change by placing a plus sign (+) in column 2 if the group seems more English than at first, or a minus sign (-) if it seems less so.

Part 3. Basing your answers on your reconsidered opinions in Part 2, now indicate what was English about the sentences and what was non-English.

English Non-English

1. ____________________ ____________________
2. ____________________ ____________________
3. ____________________ ____________________
4. ____________________ ____________________
5. ____________________ ____________________
6. ____________________ ____________________
7. ____________________ ____________________
8. ____________________ ____________________
9. ____________________ ____________________
10. ____________________ ____________________

Note to the teacher: #1 of Part I translated from the Greek into "Happy Birthday."

Exercise I cont.

Part 4. Revise all the word groups into "normal" English sentences.

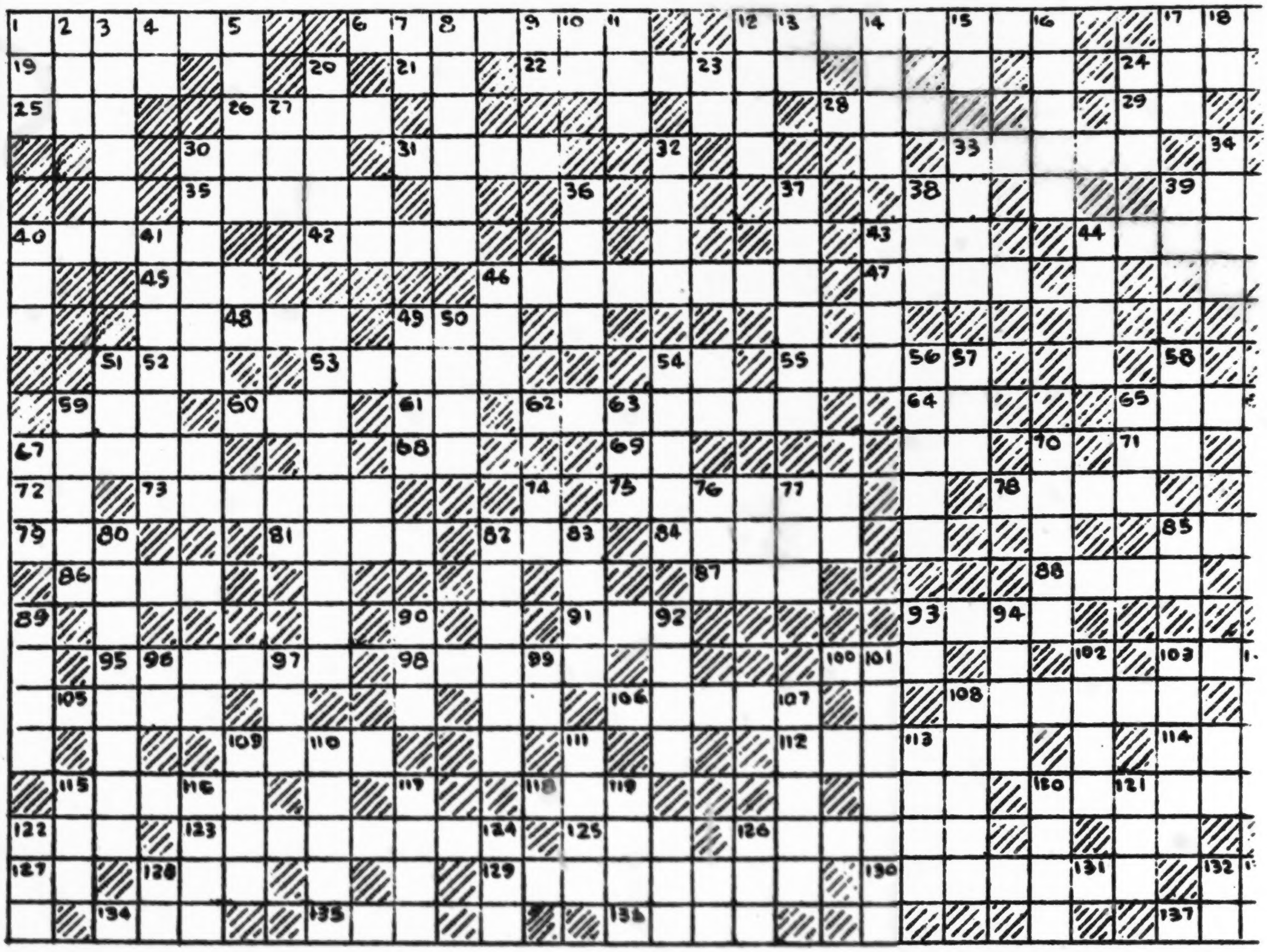
1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________

Exercise II. Listen as I read the revised sentences. In the space after each number write what you find to be non-English in the sentence.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________

Exercise III. Using your answers and the class discussion as a basis for your judgment, list here all the necessary constituents of the English--in other words, all the signals that would indicate to a native English speaker that a certain utterance is in the English language.

(Note: This brief unit very quickly and successfully elicits from students such answers as: words, sounds, pause, accent, tone, word order, word endings, need of function words. As the students identify the constituents, I give them the linguistic term; e.g., pause=juncture.)



Instructions

Part I

Work this part as you would any ordinary crossword puzzle, but spelling the words in phonemic transcription. Treat diphthongs as a single symbol occupying a single box in the puzzle. A dictionary, or better yet, a thesaurus, would be an excellent aid in solving the puzzle. If you have difficulty with finding a word, try putting the clue into a sentence and then substituting synonyms. For instance, in #21 across, əkariŋ dəriŋ ðə nayt, could be said as "I stayed at my aunt's house during the night," and looking for a synonym for the underlined portion would lead to overnight. Doubtful pronunciations should be checked against a good dictionary. The American College Dictionary was used in preparing the puzzle.

Part II

Answer each question by filling in the appropriate space in the puzzle. The appropriate space is noted in parentheses before each question.

Part I

across

1. kəmliy
6. əneybəl tuw riylæks
12. əmeyziŋ ɔr beysd an feybəlz
17. tuw teyk peynz tuw əvoyd
19. səbstituwt fɔr ðə seventiy sent spred
22. əkəriŋ dəriŋ ðə nayt
25. æn emtiy speys
26. ə lo mɔrnfəl sawnd
28. ə misčivəs čayld
29. ræθ
31. old
35. flayiŋ ə θiŋ an ə striŋ
39. ə sfiyr ɔr glob
42. ə lawd šarp kray
44. stey
45. ə sinonim fɔr čæritiy
46. səbmisiv tuw əθoritiy
47. kanteyniŋ nəθiŋ
49. šarp piyrsiŋ ɔr baytiŋ
51. æt end əv ðə fut
53. divawt pətišənz tuw gad
54. stikiy mætər
60. in greytər kwantitiy
61. spiyk
62. tuw poynt awt
64. ðə hayist kard in ə suwt
67. kampænyənz
68. trænkwil rest
69. θərd pərsən nuwtər pronawn
72. wət ðə praspektiv brayd hops tuw wɔk dawn
73. ə pərsən əv no impɔrtəns sošəliy
75. ə kləmsiy stuwpid pərsən
79. tuw rən [illegible] wið bawndiŋ steps
81. æn awtsweliŋ part
84. ə dɔgz neym
85. ə minərəl spriŋ
87. kripəld
88. tuw set əpan wið fɔrs
100. tuw əpiyl
103. šɔrt fɔr rabərt
109. æn ɔrnəmənt fɔr ðiy iyr
114. madərətliy kold
118. æn impləmənt fɔr tərniŋ soyl
120. pærəntles čildrən
123. ruwinəs
125. posesiv fɔrm əv it
126. timbər sɔwd intuw bɔrdz
127. fɔrθ fram ɔr əwey fram
128. wət ðə šepərd tendz
129. hom əv ðə biytəlz
130. tuw meyk iysiyər tuw enduwr
134. tuw riykəvər fram ə wuwnd
135. tuw ənoy in spɔrt
136. gawnz wɔrn bay ə kwayr
137. ðə lowər part əv yər iy.

down

1. ə partisəpəl fɔrm əv hiyr
2. ə səbstins kampozd əv tuw ɔr mɔr metəlz
3. nesiseriy
4. veriy ɔr ekstriymliy
5. ə noyziy bərd
7. ə lispd letər es
9. klos tuw ðə grawnd
10. ə prepəzišən indikeytiŋ pozešən
11. æn ənspesifiyd nəmbər ɔr kwantitiy
12. ə dɔgz neym
13. ə prepəzišən indikeytiŋ pleys
14. ə sitiy in ærəzonə
15. ə fɔlshud
17. ə briyf [illegible] əv reyn
23. əv riysint ɔrəǰin
27. ə fəro ɔr træk in ðə grawnd
34. ə bɔrdər fɔr ə pikčər
37. wən huw peynts pikčərz
38. ə diyp prolɔngd sawnd
41. sik
44. beyk bay dray hiyt
49. ə feyməs enginiyr neymd ǰonz
50. tuw rəb ɔr skreyp awt
51. æn instrəmənt fɔr wərk
52. ə fɔrm əv aksəgin (O_3)
54. ðiy edj əv ðə striyt
56. æn ətæčd stikər tuw indikeyt kantents
57. wer ðə sən rayziz
58. ðə luwnər ɔrb
66. ə pərsən ovərenθuwsiyæstik fɔr ə kɔz
67. a tuwl fɔr smuwðiŋ metəl
76. ə dark blemiš an ðə skin
77. tuw muwv tɔrd ðə spiykər
93. abjektiv fərst pərsən siŋyuwlər pronawn
96. tuw meyk ə misteyk
97. ðə sentər əv æn æpəl
101 eymiyəbəl
103. kukiŋ bay dray hiyt in æn əvin
104. ðey riŋ in ə čərč tawər
107. tuw let awt siykrits
108. kɔziŋ sædnes ɔr gluwm
110. tuw set an fayr
111. ə meditəreyniyən fruwt
113. tuw meyk voyd
115. ə layt pɔrtəbəl bed
116. æn ərnist riykwest
117. ðə residuw əv ə fayr
119. ekstərnəl
120. ə priyfiks miyniŋ hiyr
121. æt ðiy end əv ə leg
124. teykiŋ ə lɔng taym
126. tuw feyl tuw win
128. θərd pərsən siŋgyuwlər feminən pronawn
132. enəmiy
133. ðə fɔliŋ əv ðə tayd

Part II

The overnight guest stayed overnight.

1. (102 down) What is the stressed morpheme in the underlined adjective of this sentence?
2. (24 down) What is the stressed morpheme in the underlined adverb of this sentence?

She saw a car in the driveway.

3. (90 down) What is the stressed word if the sentence means "not a motorbike"?
4. (108 across) What is the stressed word if the sentence means "not in the gara
5. (131 down) What is the stressed word if the sentence means "only one was ther

6. (33 across) What is the stressed syllable in conflict used as a verb?
7. (83 down) What is the stressed syllable in remarkable when it is used as a predicate adjective?

He and I always go to see Mary and Jack, for we
cannot wait for them to see us.

8. (71 across) the and in he and I of the sentence above.
9. (18 down) the and in Mary and Jack of the sentence above.
10. (70 down) the always in the sentence above.

(a) My butler is a green houseman, and he needs more experience to do his job well.
(b) That's because his experience as a greenhouse man has been in working with plants rather than with people.
(c) Wouldn't they hire a greenhouse woman to work in a nursery? No, they'd hire a greenhouse man.

11. (48 across) On what syllable would the stress fall in sentence (a)?
12. (36 down) On what syllable would the stress fall in sentence (b)?
13. (65 down) On what syllable would the stress fall in sentence (c)?

Mother was V-ing Preposition Object of Prep. as she
14 15 16
was V-ing Adjective Noun-Direct Object in the ________.
17 18 19 20

14. (16 down) ətəriŋ sawndz in səksešən wið myuwzikəl məǰəleyšən əv ðə voys
15. (74 down) ə prepəzišən spesifayiŋ ðə riysiyvər əv ðiy ækšən əv ðə vərb
16. (———————) ə rifleksiv pronawn
17. (103 down) kukiŋ bay drey hiyt in æn əvin
18. (30 across) æn edibəl fruwt fawnd in ɔrčərds
19. (40 down) beykt dišiz wið æn əndər ænd əpər krəst
20. 115 across) ə ruwm fɔr kukiŋ

There is use in learning sentence contours
because you can use them.

21. (43 across) use as it appears the first time in the sentence.
22. (59 across) use as it appears the second time in the sentence.

The Polish ambassador has a great deal of polish in his manners.

23. (20 down) Polish as it appears the first time in the sentence.
24. (40 across) polish as it appears the second time in the sentence.

You spilled your Adjective Noun : now you
25 26
have a(n) Verb-ed Noun.
27 28

25. (43 down) ə brayt kʌlər layk ðæt əv bʌtər
26. (86 across) ə kemikəl sʌbstins fɔr kyəriŋ diziyz
27. (59 down) tuw meyk ə brayt kʌlər layk ðæt əv bʌtər
28. (91 across) ə skweyr ɔr ablɔŋ kərpit

______ ______ ______.
29 30 31

29. (78 across) tuw əreynǰ ə skiym fɔr ə prajekt
30. (65 across) čeynǰiz əv pleys ɔr pozišən
31. (55 across) teykiŋ ə lɔŋ taym

The sentence above could be paraphrased as —

Prepare for ______ ______ haste.
32 33

32. (30 down) ðiŋz ðæt ar dʌn ɔr eksəršənz
33. (106 across) lækiŋ

In analysing the structure of the sentence made up of 29, 30, and 31 —

34. (105 across) The first word would be what part of speech?
35. (53 down) How would it be functioning in the sentence?
36. (24 across) The second word would be what part of speech?
37. (95 + 98 across) How would the second word be functioning in the sentence?
38. (112 across) The third word would be what part of speech?
39. (93 across) Which of the three words would get the most stress?

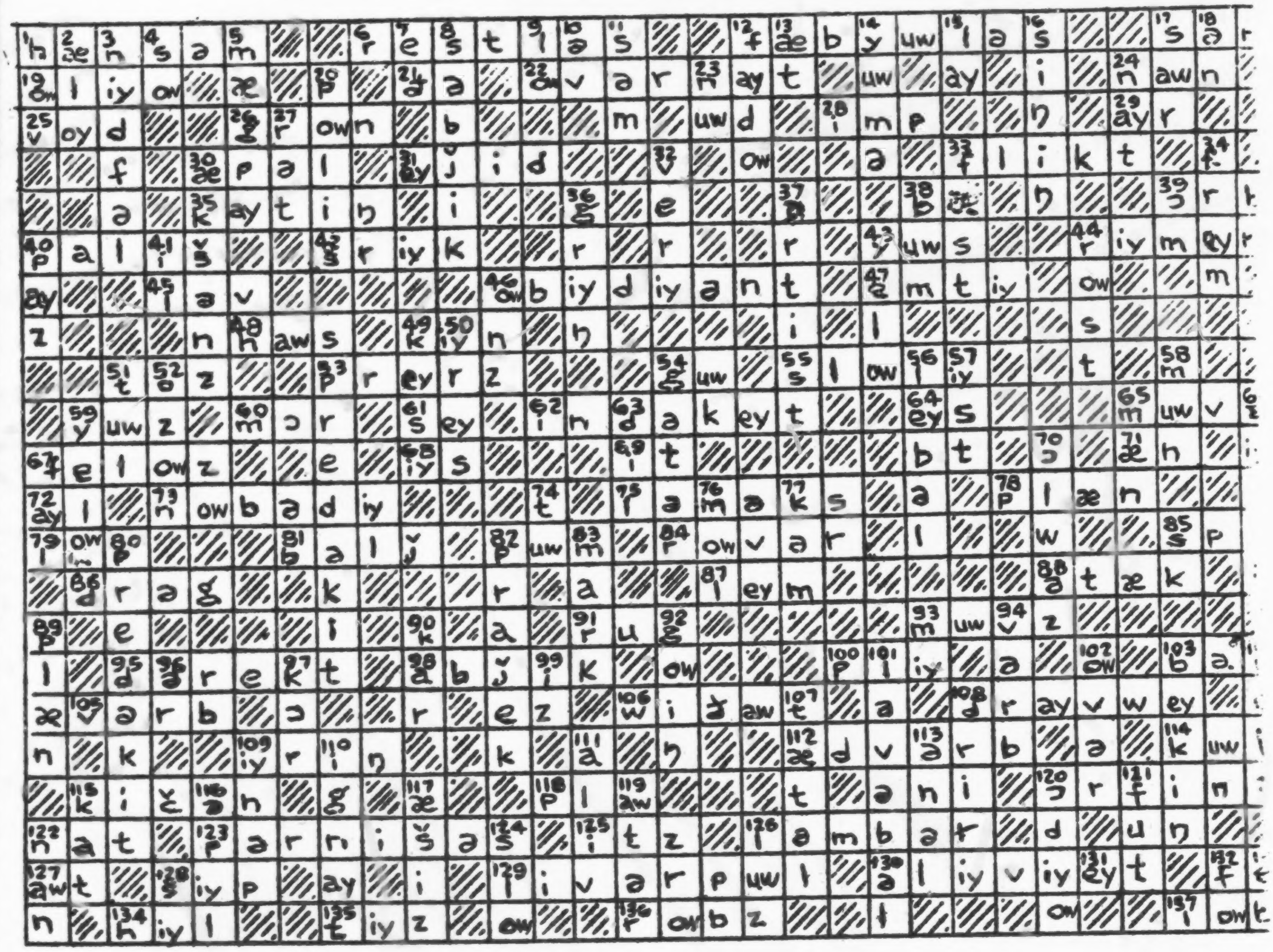
Suppose the meaning of the sentence changed so that it
could be paraphrased as follows:

40. (21 across) ə nawn ditərminər
41. (82 down) ə tæsk əv meyǰər prəpɔršənz
42. (99 down) ɔksilyəriy fɔrm əv tuw biy
43. (122 across) ə wərd ekspresiŋ dinayəl
44. (92 down) prosiydiŋ
45. (32 down) ə kwɑlifayər signifayiŋ ə hay degriy
46. (33 down) swifliy

Keeping in mind this meaning for the sentence made up of 29, 30, and 31 —

47. (122 down) What part of speech would the first word be?
48. (8 down) How would it be functioning in the sentence?
49. (94 down) What part of speech would the second word be?
50. (80 down) How would the second word be functioning in the sentence?
51. (89 down) Which of the three words would get the strongest stress?

Answer Key to A Phonemic Crossword Puzzle



IX. THE PHONEMIC COMPUTER: Construction and Use

Introduction

Students can construct a small, disc-type computer to help them in the study of phonemics. This computer can be assembled in a class period from simple materials available in every school. Little or no expense is involved with this visual aid which can fulfill several purposes.

Purposes

The phonemic computer can serve the student in several ways, the primary one being in learning the phonemic symbols and their graphemic counterparts. It serves not only as a teaching--learning device but also as a review aid, since the student has a personally constructed device containing all the segmental phonemes he has studied in a form convenient for carrying in a notebook or keeping in his desk. Construction of this computer provides for some creativity and motivation in the teaching of phonemics, as well as the assurance of uniformity in providing phoneme, grapheme, and illustrative word to an entire class.

Construction

The simple computer is comprised of two discs of approximately 7½ inches in diameter. (See the accompanying diagrams.) The inner disc (figure A) upon which the symbols are written is of white poster board. The outer or cover disc (figure B) is of construction paper. Three holes are cut in this cover to allow one phoneme--grapheme--word set to show at once. The two discs are held together by pushing a small wing-type fastener through the centers. Use of gummed ring reinforcements at the center of both discs is recommended.

Once each student has constructed a blank computer, the process of filling it in may begin. This process may come as a culminating review of the phonemes at the end of the unit of study, or it may be a step-by-step activity correlated with the original presentation.

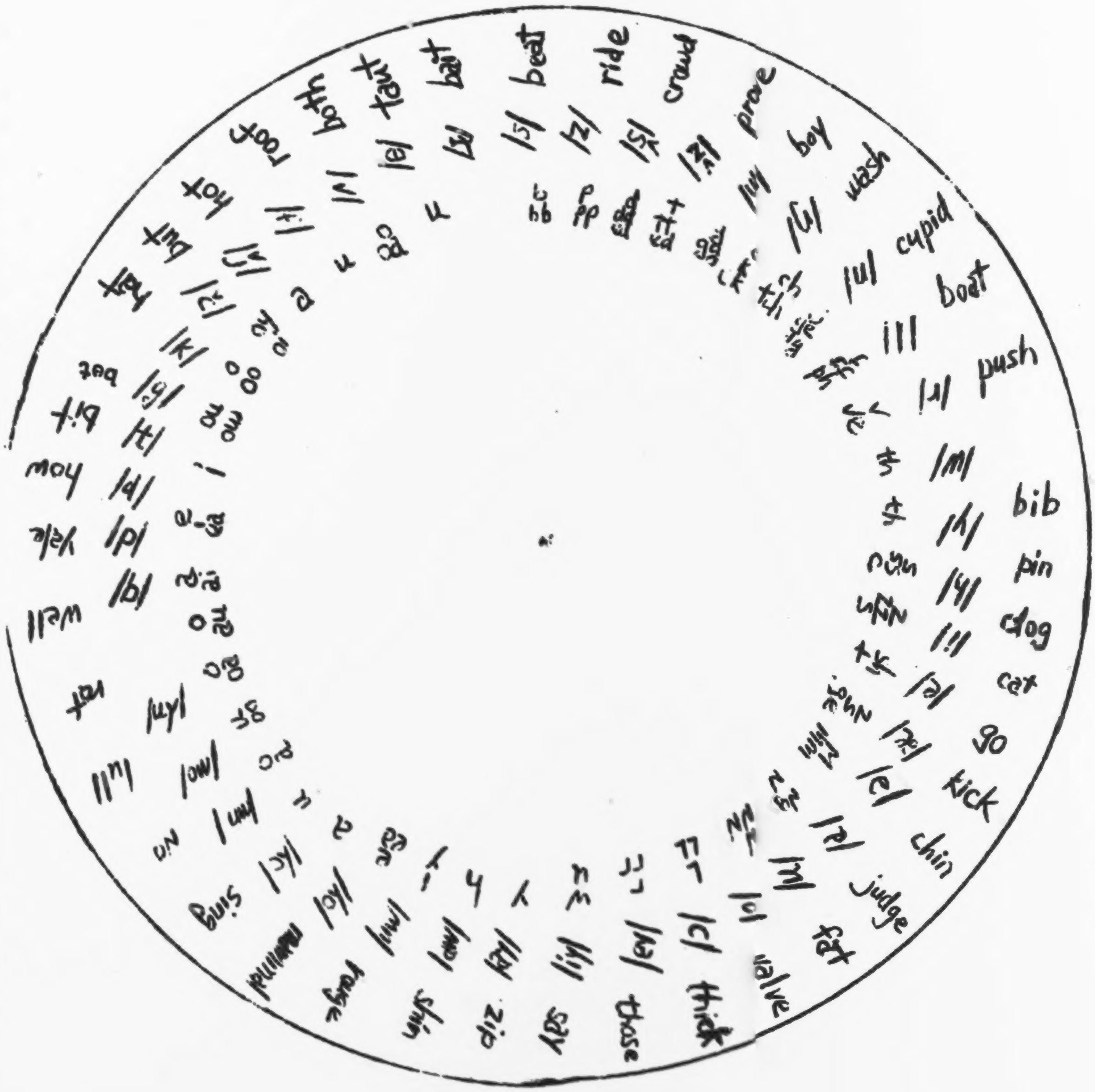
Filling in the computer requires these steps:

1. In the blank space at the left put in the first phonemic symbol--/b/. (Ball point pen is suitable.)
2. Make sure that the discs are held firmly so that they do not rotate. In the upper space put in the corresponding grapheme--b.
3. In the space at the right edge put in a word which illustrates the phoneme--bib.
4. Now rotate the cover disc slowly clockwise until the inner disc is clear of the previous markings.
5. Repeat steps 1--4 with the remaining phonemic sets.
6. Once all of the sets are written on the inner disc, the computer is complete. If the cover has been rotated clockwise carefully after each set, the student will be able to include all the sets so that any one may be dialed without overlap or intrusion of other sets. (There should also be some space left on the computer so that a student or a class may include sounds that are peculiar to their dialects.)

Alternate method

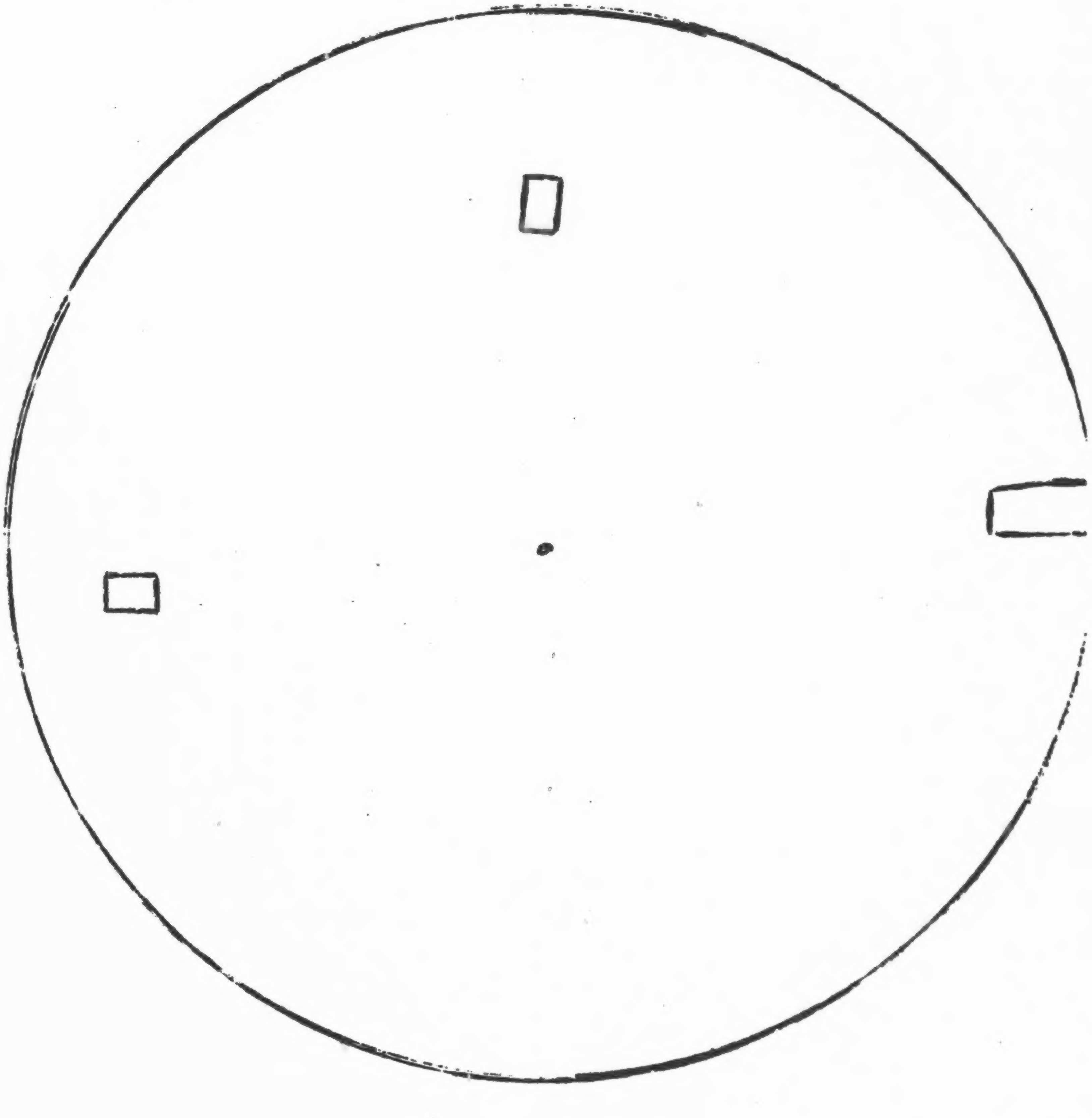
A completed inner disc (diagram A) and the cover disc (diagram B) may be duplicated and presented to the students for cutting and fastening together. An ink or mimeograph copy of both diagrams may be reproduced on Thermo-Fax ditto masters, and then transferred directly to appropriate paper or posterboard.

Diagram A. Inner disc.



beat
ride
crowd
prove
boy
wash
cupid
boat
push
bib
pin
dog
cat
go
kick
chin
judge
fat
valve
thick
those
say
zip
shin
rouge
sing
no
lull
rat
well
yale
how
bit
bet
hat
but
hot
roof
both
taut
bait

Diagram B. Cover disc.



X. INTRODUCTION TO PHONEMIC TRANSCRIPTION
SOUND PRODUCTION SLIDES

General:

The voice box, or larynx, is popularly called the Adam's apple. To locate it, place your hand on your neck under your chin and swallow. The Larynx is the structure which you feel move up and down. Across the top of it from front to back there are lip-like structures called vocal bands which are vibrated to produce sound, much as vibrating strings produce sound on a musical instrument. When you are breathing quietly,your vocal bands are separated and the air passes freely. When you wish to speak, you partially close the air passage and exhale against the vocal bands, thereby causing a vibration which may vary from 64 times per second for a deep bass to 1000 times per second for a high soprano.

Place your hand on the larynx as you say ah. You should feel the vibration of the vocal bands. Now say ah-oo-oo; you should notice that the difference between these sounds are caused by the changes you make in the shape of the cavity inside your mouth while the vocal vibration is passing through it. Sounds of this type are called vowels.

The rest of the sounds of English are lumped together under the heading of consonants because they are sounded with [Latin con + sonare] the vowels. They consist of sound produced by deflecting or blocking the breath stream. In contrast with the musical quality of the vowels, consonants are largely noises. We will treat the consonants in groups according to the way in which they are produced, according to the types of noises they are (hisses, trills, pops -- although these are not the names we will use).

1. STOPS -- Bilabial /p/ and /b/

All stops are formed by completely interrupting the breath stream of the speaker. Stops vary in that the air stream is stopped at different places or points of articulation.

The bilabial stop /p/ is formed by pressing the two lips together, hence, the term bilabial stop. The /p/ is voiceless, the addition of voicing creates the second bilabial stop, /b/.

2. -- stops /t/ and /d/

T The /t/ is formed by bringing the tongue tip against the gum ridge behind the upper teeth and holding the sides of the tongue firmly against the upper teeth. /d/ is formed in the same way, with the addition of voicing.

3. -- Stops /k/ and /g/

In /k/ the sound is produced by pressing the back of the tongue against the soft palate behind the roof of the mouth. /g/ uses the same tongue-back, soft palate contact point to stop the passage of breath, but /g/ is voiced.

4. AFRICATES /č/ and /ǰ/

The voiceless affricate /c/ is made by bringing the tongue tip to the gum ridge and immediately bringing it away somewhat more slowly then in the release of the stop /t/. /j/ is formed in the same manner with the addition of voicing.

5. FRICATIVES /f/ and /v/

The fricatives are produced by placing the lower lip lightly against the upper teeth. Friction is created as the breath is forced through. The sounds are distinguished by voicing: /f/ is voiceless while /v/ is voiced.

6. FRICATIVES /θ/ and /ð/

These sounds are created by the friction of the breath which is forced between the tip of the tongue and the upper front teeth. The / / is voiceless--thin, booth, other, deathly. /ð/ is produced in the same way as /θ/ except for the addition of voice--then, either, there, bathe.

7. SIBILANTS /s/ and /z/

/s/ is voiceless, while /z/ is voiced. Both sounds are formed by the forcing of air through a groove or narrow channel in the tip of the tongue. The tongue is against the ridge of the upper front teeth.

8. SIBILANTS /š/ and /ž/

The voiceless /š/ is made like /s/ except that the groove is in the blade and front of the tongue, and the air stream is directed against the upper gum ridge. /ž/ requires the addition of voicing.

9. NASAL /m/

The sound /m/ is formed by resonating (vibrating) the nasal cavity. The oral cavity is closed off by closing the lips, as in the bilabial stops /p/ and /b/, but this sound is continued. The /m/ is thus nasal, bilabial, and continuant. Close your lips and hum.

10. NASAL /n/

The /n/ is a continuant which is again resonated in the nasal cavity. Thr oral cavity is blocked by the tongue-tip against the gum ridge. Like /m/, the /n/ is voiced.

11. NASAL /ŋ/

The nasal /ŋ/ is produced by a continuing resonance of the nasal cavity. The oral cavity is blocked by the back of the tongue, which moves against the soft palate to force the air stream through the nasal cavity.

12. LATERAL /l/

The phoneme /l/ is a voiced sound produced with the tongue-tip touching the gum ridge, with the sound spread out across the width of the tongue. The term lateral simply refers to the production of the sound across the width of the tongue; /l/ is the only lateral in English. Like the nasals, the lateral /l/ is a continuant.

13. SEMIVOWEL /r/

The phoneme /r/ is termed a semivowel because it is always made in conjunction with at least one vowel. The /r/ blends rapidly into the vowel sound which follows it, or the vowel sound rapidly blends into a following /r/.

It is produced in three ways:

A. The tongue-back /r/—the tongue is raised in back against the upper teeth, and the front of the tongue is sloped downward, with the tip of the tongue drawn slightly back. The lips are often somewhat rounded. The above is the most common way the /r/ is made in general American dialect.

B. The tongue-tip /r/—the back of the tongue is raised against the upper teeth, and the tip of the tongue is turned upward and drawn back, nearly touching the back of the gum ridge. It is relatively easy to make a trilled /r/ from this position, by pressing it against the gum ridge as the air is forced over the tip of the tongue.

C. The friction /r/— the tip of the tongue is placed close to but not touching the gum ridge. When air is forced over the tongue tip, a friction occurs. It is a voiced sound in initial position, but may be voiceless after a voiceless sound (tree, three). It is most likely to be produced in American speakers after the tongue-tip consonants such as /t/, /d/, and /θ/.

14. SEMIVOWEL /w/

The lips are rounded slightly while the back of the tongue is raised toward the back of the soft palate. The tongue is then released rapidly to move to the position of the next vowel.

"The labiovelar semivowel /w/ has a double articulation: the lips are pursed and the back of the tongue approaches the roof of the mouth, the position of the tongue varying with the following vowel. The vocal chords vibrate. After aspirated /t/ or /k/, as in twice, quit, the /s/ is partially unvoiced."
--Kurath

15. SEMIVOWEL /y/

The /y/ sound is produced by raising the front (but not the tip) of the tongue toward the hard palate and expelling the voiced breath as the tongue moves away from the position just described and toward the position of whatever vowel follows. (This movement is sometimes termed a "glide.")

Like /w/, /y/ is characterized by motion of the speech agents rather than by a maintained position.

16. SEMIVOWEL /h/

The phoneme /h/ is a central semivowel formed by dropping the position of the jaw. It is normally voiceless, but it is voiced between two voiced sounds in inhibition, Sahara, and perhaps.

The /h/ differs from all other consonants of the fricative class in that it lacks any fixed articulation position in the oral cavity. The velum is closed to block the nasal cavity, and the slight friction of the sound is produced at the half-open lips and modified by the resonance of the oral cavity as determined by the tongue and lip positions assumed for the following vowel or semivowel. Thus /h/ has as many positional variations as the number of vowels and semivowels that can follow it.

VOWEL SOUNDS -- General

Vowels differ from consonants in being produced by the relatively unobstructed passage of breath through the mouth. Thus they contrast with consonants, which, as we have seen, are produced by some contact or construction of the speech organs, resulting in complete or partial stoppage of breath.

Vowels are distinguished from one another in several ways:
1. length
2. height of tongue
3. place of articulation
4. tension of tongue muscles
5. rounding of lips

17. HIGH VOWELS /i/ and /u/

The phoneme /i/ is a high, front, lax vowel, with the upper surface of the tongue less convex, and no muscular bulge under the chin. The decreased tension of the tongue is important.

The /u/ is a high, back, lax vowel. The tongue is retracted from the front position for /i/, and the lips are not fully rounded.

18. MIDDLE VOWELS /e/. /ə/, and /o/

The vowel phoneme /e/ is the mid-front lax vowel. The tongue muscles are relaxed, and no bulge can be felt under the chin.

The unstressed vowel /ə/ is a central lax vowel. As the sound is produced, the tongue, jaw, and throat are relaxed. The sound is produced without apparent articulation above the throat. This sound could be described as a "gruntle"; poke yourself in the stomach hard enough to produce an involuntary cry, and that sound should be /ə/ or close to it.

The /o/ vowel phoneme is produced with rounded lips, and it is described as a middle back vowel. Middle refers to the relative tongue height, and back indicates that the tongue is bunched in the rear of the mouth.

19. LOW VOWELS /æ/, /a/ and /ɔ/

To understand the low vowels, hold the finger horizontally under the jaw while the vowels /i/. /e/ and /æ/ are pronounced. The dropping of the jaw, registering the dropping of the tongue from high to low, can readily be felt.

The low front vowel, /æ/, is produced with rounded lips and the tongue in a relaxed, low, frontal position.

The low central vowel /a/ is produced with the tongue-arch in the center of the mouth, midway between the front and back vowel positions.

The tongue is retracted and bunched at the back of the mouth to produce the low back vowel. /ɔ/.

DIPHTHONGS – General

Diphhhongs are composed of a simple vowel sound, combined with a gliding movement of the tongue to an upward and forward position (FRONTING DIPHTHONGS) or to an upward and backward position of the RETRACTING DIPHTHONGS. The fronting diphthongs approach the /i/ sound and tongue position; the retracting diphthongs approximate that of the /u/. These form the /y/ glide and the /w/ glide.

The /iy/ glide, not shown in the slides, is made in two ways; the first is by gliding the tongue toward the /i/ position as in yes, and the second is by gliding the tongue away from the /i/ position as in say. While these sounds may be a bit different from each other, we will consider them as allophones.

20. FRONTING DIPHTHONGS /ey/ and /oy/

The /ey/ is a mid-front tense diphthong. The tension of the tongue muscles can be felt in the bulge under the chin, as for /iy/.

The /oy/ diphthong begins with the middle back vowel /o/. followed by the gliding movement of the tongue toward the /i/ position.

21. FRONTING DIPHTHONGS /ay/ and/ɔy/

The low central vowel diphthong /ay/ and the low back vowel diphthong /ɔy/ are created by the lengthening of the vowel sound followed by the gliding movement of the tongue toward the /i/ position. The distinction between /oy/ and /ɔy/ is irrelevant for many speakers.

22. RETRACTING DIPHTHONGS /aw/ and/uw/

The retracting diphthongs are formed with the tongue in the position of the beginning vowel /a/ or /u/. The tongue is retracted or "curled back" during the glide to the position of the high back vowel /u/.

Note: One set of the sound production slides is filed with the English Institute Materials Center at M.L.A.

XI. PHONOLOGY UNIT GLOSSARY

AFFRICATE: the sound produced when a stop is released gradually rather than abruptly, in this unit /č/ and /ǰ/

ALLOPHONE: non-meaningful variant of a single phoneme, caused usually by position in the utterance or by dialectal variation. Example: the initial and final sounds in pup are allophones of /p/.

BILABIAL: said of a stop, made with both lips; /p/ and /b/.

CONSONANT: all types of sounds except vowels, produced by contact or constriction of the speech organs resulting in deflection or complete or partial blocking of the breath stream.

CONTINUANT: a consonant whose sound may be prolonged without a change in quality, opposed to stop.

DIACRITIC: a mark, point, or sign attached to a letter to indicate its phonetic value or to distinguish it from another letter; in this unit, ˇ as in /ǰ š ž č/.

DIPHTHONG: a blend of two vowel sounds in one syllable.

ETH: the letter ð from Old English, used in the International Phonetic Alphabet and as the phoneme /ð/ in this unit to represent voiced th. Students should note that the word eth itself contains the sound /ð/.

FADE-FALL TERMINAL: used to indicate that as the sound fades out the pitch falls. In this unit symbolized by ↘.

FADE- RISE TERMINAL: used to indicate that as the sound fades out, the pitch rises. In this unit symbolized by ↗

FRICATIVE: a sound produced by the passage of breath through a narrow aperture with resultant audible friction, in this unit, /f v ð ʒ/.

GLIDE: a transitional sound made in passing from the position of one speech sound to that of another; in this unit, mentioned in connection with diphthongs and semi-vowels.

GRADATION: a sound change resulting from change in stress, usually in a vowel; e.g. /ar yuw kə min/
/ hwən ər yə kámin?/

GRAPHEME: 1) an alphabetic letter, used in this unit as a term to clarify the contrast between the smallest unit of spelling and the smallest unit of sound (phoneme).

	Example: in the word and, the vowel phoneme is /æ/; the vowel grapheme is a, 2) Also a mark of punctuation, used in this unit to clarify the contrast between the marks of writing and the symbols of suprasegmental phonemes. Example: If you can, go. graphemes /^{2}if yuw ^{3}kæn^2 → ^{3}gow^1↓/ phonemes
GUM RIDGE:	the ridge immediately behind and above the upper front teeth.
HARD PALATE:	the front half of the roof of the mouth, hard because of underlying bone, in contrast with the soft palate.
INTONATION CONTOUR:	the significant speech pattern or patterns resulting from the speaker's combination of stresses, pitches, and junctures.
JUNCTURE.	the passage from one sound to the next in the stream of speech; to simplify, this may be thought of as pause or lack of pause.
LATERAL:	a sound produced by the breath passing over one or both sides of the tongue, said of the phoneme /l/.
LIGATURE:	a written character consisting of two or more connected letters; in this unit / æ/.
MINIMAL PAIR:	a pair of words with only one phonemic difference: e.g. /pin/ /bin/.
MORPHOLOGY:	the study of words and their meaningful parts made up from the individual speech sounds.
NASAL:	a sound produced by the voice passing partially or wholly through the nose, in this unit / m n ŋ /.
PHONEME:	a speech sound that signals a difference in meaning, classified into two groups: segmental and suprasegmental.
PHONOLOGY:	the study of the system of speech sounds.
PITCH:	the relative speed of vibration of sounds, compared with the use of the term in music.
QUALIFIER:	such words as very, quite, and rather appearing before adjectives and adverbs to indicate degree.

SCHWA:	sometimes called the neutral vowel, an exceedingly common vowel in English, represented in spelling by all five vowel graphemes and in this unit by the symbol /ə/. The sound is roughly equivalent to *uh*.
SEGMENTAL PHONEMES:	the vowels and consonants, the components of the stream of speech.
SEMI-VOWEL:	a vowel-like sound, characterized by rapid transition from one mouth position to another, and not the nucleus of the syllable; in this unit, / h w r y /.
SIBILANT:	a consonant produced by the passage of air through a very narrow passage in the front of the mouth; in this unit, / s z š ž /.
SOFT PALATE:	the back half of the roof of the mouth, so called in contrast to the bony front half, the hard palate.
STOP:	a consonant formed by completely interrupting the breath of the speaker; in this unit, /p b t d k g /.
STRESS:	the emphasis or loudness given one syllable in relative contrast with another.
SUPRASEGMENTAL PHONEMES:	collectively, the features of stress, pitch, and juncture, so called because they are superimposed upon the stream of speech (segmental phonemes).
SYNTAX:	the study of word arrangement to make sentences.
TERMINAL:	see *terminal juncture*
TERMINAL JUNCTURE:	the closing of an utterance (sometimes shortened to *terminal*).
THETA:	a letter from the Greek alphabet used in the International Phonetic Alphabet and as the phoneme /θ/ in this unit to represent voiceless *th*. Students should note that the word *theta* contains the sound /θ/.
VOICED:	said of a sound uttered with vibration of the vocal cords. In the pair /p/, /b/, /p/ is voiceless; /b/ is *voiced*.
VOICELESS:	said of a sound uttered without vibration of the vocal cords. In the pair /p/, /b/, /p/ is *voiceless*; /b/ is voiced.
VOWEL:	the relatively unobstructed sound of the human voice, normally the most prominent sound in its syllable.

PART II Suprasegmental Phonemes

I. Introduction

This six-day unit is a comprehensive introduction to the suprasegmental phonemes of English. Included in the materials are detailed day-by-day lesson plans, exercises, and tests. The essay included after the lesson plans may be helpful to teachers who wish additional material for exceptional students or who wish to incorporate the entire unit into a larger unit on literature or creative writing. The unit can be incorporated into the fifteen-day phonology material as a supplement or substitute for the tenth through fourteenth day.

Note: Though the material in this unit is very comprehensive, the teacher will find it helpful to read Sections II, III, IV, and V of the fifteen-day phonology unit.

CONTENTS

I. Introduction

II. Six-day unit in suprasegmental phonemes with day-by-day synopses, exercises, worksheets, and tests.

III. Using Audio Aids in Teaching Intonation

OBJECTIVES

One objective of this unit is to make the student aware of the importance of the suprasegmentals as aids to the understanding of punctuation in writing. Historically, the intonation pattern of the spoken utterance came first; therefore punctuation is more often than not an attempt to record the intonation patterns of speech, specifically the patterns of pitch, stress, and juncture. These three suprasegmental phonemes can be particularly valuable in explaining the punctuation of series, nonrestrictive elements, sentence modifiers, and layers of modification.

Another objective of this unit is to demonstrate the importance of intonation in clarifying misreadings and ambiguities. (e.g., "In the morning mail that he should have received was not there." For clarity, this should read "In the morning, mail that he should ...." Or, "John says his brother is lazy" and "John, says his brother, is lazy."

Finally, an understanding of suprasegmentals could be particularly valuable to the student in delving into the aspects of artistic writing of prose and poetry, and in providing clues to interpretation of the rhythms and stresses of a work.

DAY-BY-DAY LESSON PLANS [*]

1. Class: Introduce the characteristics of pitch, stress, and juncture, and demonstrate the methods of hearing and representing the distinctions. The teacher can present examples and ask the students to give comparable items, practicing the recognition of distinctions. The importance of pitch should be noted here, even though the succeeding lessons will present stress, juncture, and intonation contours in significant relationships.

Assign: Worksheet A--The student will mark the items of stress for words and sentences and note the consequent conclusions derived from the exercises.

2. Class: Discuss any aspects of Worksheet A. Make sure that the students understand how stress reveals grammatical structure, particularly coordinate and subordinate relationships in a series of two-word relationships. Introduce the marking of sentence contours. Demonstrate common contours; discuss the possibilities of artificial or forced contours, and contour variations which emphasize alternate meanings.

Assign: Worksheet B--Ask students to attempt a usual connotation, not a variant meaning. (Students might wish to indicate a variant with a different color, or a broken line, etc.)

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[*] Before beginning the unit, hand students properly punctuated copies of Worksheet C-1 and make a recording of each sentence, having a different student read each one. When C-1 is handed out to students on Day 3, it should not include punctuation or explanations.

3. Class: Discuss any questions arising from Worksheet B, and/or review briefly sample items.

Begin the introduction of stress-terminal patterns (Worksheet C-1).

Ask students to write in pencil the stresses and terminal junctures for sentences 1-10. Then student notations can be compared with the tape recording (made prior to the commencement of this unit) or the teacher's reading.

Assign: Worksheet C-2

4. Class: Discuss or review briefly items from Worksheet C-2. Continue work with stress-terminal patterns (Worksheet C-1), completing sentences with three stress-terminal patterns and intervening structures (sentences 11-24), with adjective series (sentences 25-29), with other types of series (sentences 30-36).

Assign: Worksheet D

5. Class: Review the relationship of word form and of stress and terminal juncture to punctuation. Continue work with stress-terminal patterns, discussing item 37 (Work sheet C-1) and using the tape-recording or the reading of the teacher as a comparative pattern. Discuss sentence building through coordination and subordination, demonstrating the punctuation of the newly formed items through the work with stress-terminal patterns.

Assign: Worksheet E.

6. Class: Review Worksheet E.

Test on the unit, covering applications of stress, stress-terminal patterns, intonation contours, and pitch to punctuation and meaning. (Optional; this may be used as a review exercise.)

Assign: Selection of a paragraph of prose or a short part of a poem-12-20 lines. Practice reading orally in order to convey through stress, pitch, and juncture the exact meaning and emphasis of the writer. Avoid overemphasis or the emphasizing of unimportant items. (This optional assignment should be followed by a discussion of the differences between poetry and prose, noting, for example, the frequency of intervening and subordinate structures and the consequent seeming looseness or compactness of expression.)

FIRST DAY: Examples of the relation of stress to meaning.

Part I Stress	1.	fór --- bèfóre	fórecàst --- fòrecástăblè
Part II Shifting Stress	2.	âccéptăblè	àccêptăblĕ plán
Part III Grammatical Stress Patterns	3.	There was no cóntràct, since he didn't còntráct to do it. Your cónflìct cònflícts with my plans.	
	4.	The únsèen action remains ùnséen.	
	5.	Do you want a líghthòuse-kêepĕr? No, I want a lîght-hóusekèepĕr. Oh, you want a light hôusekèepĕr. I don't care how much she weighs.	
Part IV Close Juncture	6.	First we needed rain; now we need a drain.	
Part V Gradation	7.	And you want either hâm or éggs? No, not ham ór eggs, but ham ánd eggs.	
Part VI. Shift in stress creating shift in emphasis	8.	Shé saw a car there.	(but I didn't)
		She sáw a car there	(she didn't just dream she did)
		She saw á car there	(there was only one car)
		She saw a cár there	(not a motorbike)
		She saw a car thére	(not in the garage)
Part VII Shift in stress creating shift in grammatical meaning	9.	S State plàn âids dèvastated aréa V DO	
		S State plan aids dêvàstated area. V DO	

WORKSHEET A: STRESS IN SINGLE WORDS AND WORD GROUPS AND SENTENCES - FIRST DAY

I. Recognizing stress in single words:

There are three degrees of stress in single words. Because the placement of stress is sometimes an indication of meaning, the ability to hear stress is important.

´ indicates primary stress

` indicates mid stress

˘ indicates weak stress

Example: pèrsúasiŏn

Exercise 1: Practice identifying the stress-bearing part of the word by putting a primary stress mark over the most prominent syllable.

1) subject (noun)
2) subject (verb)
3) subjection
4) produce (noun)
5) produce (verb)
6) production
7) refuse (noun)
8) refuse (verb)
9) refusal
10) write
11) rewrite
12) rewritten

Excercise 2: Identify the syllable which bears a mid stress in the words for exercise I.

From what language do these words originate? ____________

Exercise 3: Write three examples of words which reveal shifts such as 1 and 3, 4 and 6 in exercise 1.

________________ and ________________

________________ and ________________

________________ and ________________

WORKSHEET A__Page 2

II. Recognizing stress in word groups or short sentences:

In word groups or sentences four degrees of stress are commonly designated by the following marks:

/ primary stress

^ secondary stress

\ tertiary, or third, stress

∪ weak stress

Exercise 4: Practice identifying stress in words and word groups by placing the primary stress only above the stressed syllable in single words, and the primary and secondary stresses above the two syllables in the word groups or sentences.

Example: a $\overset{/}{\text{Ford}}$ --- a $\overset{\wedge}{\text{Ford}}$ $\overset{/}{\text{car}}$ --- Can he $\text{af}\overset{\wedge}{\text{ford}}$ a $\overset{/}{\text{Ford}}$?

PARTS OF SPEECH STRESS PATTERNS

GROUP I I______________ I______________

White House

dog sled

lampshade

GROUP II II______________ II______________

big dog

gleaming yacht

red pencil

GROUP III III______________ III______________

very sweet

bitterly sorrowful

hardly capable

WORKSHEET A -- Page 3

GROUP IV IV________________ IV________________

John sings

Boys and girls dance

boa constrictors squeeze

GROUP V V________________ V________________

hit a homer

fumbled the ball

polished the apple

GROUP VI VI________________ VI________________

fainted conveniently

wrote frantically

ran hard

A. Mark the stress patterns of all the two-word constructions.

B. In each set of constructions the two words are related to each other in the same way. Indicate this relationship by marking the parts of speech of each set in the proper space in the second column.

C. Compare the stress patterns within each set. Write the prevailing pattern for each set in the proper space in the third column.

D. Compare all the stress patterns in the third column. In the space at the bottom of the page, write the general rule you have formed about the stress patterns of these common two-word English Constructions.

CONCLUSION:____

____

____

WORKSHEET A: (Optional)

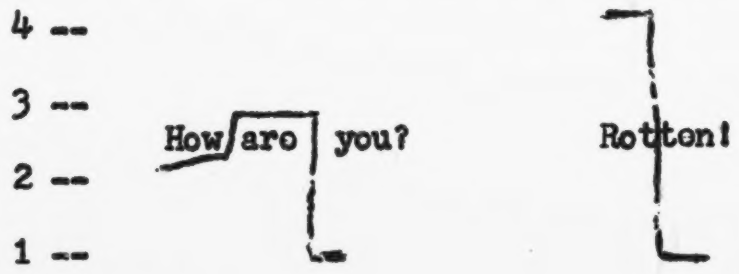
Exercise 5: The following list contains constructions which are structurally ambiguous. Mark the stress pattern above each construction and put an overbrace over any compound words. Use primary /´/, secondary /ˆ/ and tertiary /ˋ/ stresses. Then briefly explain the meaning of the construction underneath.

Example: $\overbrace{\overset{\wedge}{\text{blue}}\ \overset{\backslash}{\text{bird}}}\ \overset{/}{\text{house}}$ (a house for blue birds) $\qquad$ $\overset{\wedge}{\text{blue}}\ \overbrace{\overset{/}{\text{bird}}\ \overset{\backslash}{\text{house}}}$ (a bird house that is blue)

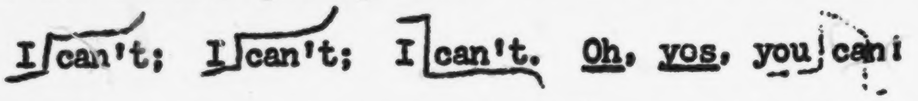
1.	red wood box	red wood box
2.	modern language teaching	modern language teaching
3.	burnt sugar cake	burnt sugar cake
4.	cream cheese cake	cream cheese cake
5.	wide belt buckle	wide belt buckle
6.	two week courses	two week courses
7.	George's body works	George's body works
8.	heavy hog production	heavy hog production
9.	more realistic details	more realistic details
10.	old time clocks	old time clocks

SECOND DAY: Marking Sentence Contours

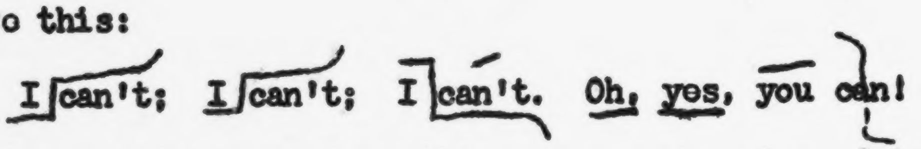
No matter which approach to the introduction of the suprasegmentals is used, the first class period should end with instruction in marking sentence contours. This could be done quickly by converting the sentence(s) already used to contours. If a horizontal line at the bottom of a word were to represent pitch /2/, and a line at the top of a word represented pitch /3/, then a horizontal line an equal distance below the word could represent pitch /1/, and one an equal distance above the word could represent pitch /4/.



The terminal junctures could be indicated by a break in the horizontal line, with the tip of the line falling, rising, or remaining level to indicate respectively fade-fall juncture, fade-rise juncture, or fade-level juncture. Thus the initial passage used would have a contour looking like this:


I can't; I can't; I can't. Oh, yes, you can!

Or if the last alternative intonation were used, it would look like this:


I can't; I can't; I can't. Oh, yes, you can!

While contours marked in this manner are not as detailed as those marked in the former manner, they are more quickly marked this way, and many students find them much easier to read and comprehend than intonation patterns marked in the more detailed manner. However they have one serious limitation: they are more difficult to erase and revise without erasing the whole sentence, unless the student writes the sentence in erase-resistant ink and the contour in pencil.

This system of marking contours will give a fairly complete picture of pitch, stress, and juncture, but since pitch is not needed to mark stress-juncture patterns used in this unit as a guide to punctuation, a simpler marking system can be used. The contour lines can be eliminated and primary stress marks, /´/, and terminal junctures /↘/ , /↗/ , and /→/ , used instead. Those can be written above the passage like this:

´ ↗ ´ ↗ ´ ↘ ´ → ´ → ´ ↘
I can't; I can't; I can't. Oh, yes, you can!

Thus we need represent only the direction of the pitch change as the sound fades out; the rest of the contour can be eliminated.

WORKSHEET B: SHIFTING STRESS IN COMPOUNDS --Second Day

When a construction runs to more than three words, the number of possible meanings increases because there are many more possible combinations for compounding the noun or the modifiers.

Example: $\overset{\wedge}{\text{light}}$, $\overset{\wedge}{\text{gray}}$, $\overset{\wedge}{\text{stone}}$ $\overset{\acute{}}{\text{walls}}$	(walls that are light in weight, gray in color, and made of stone)
$\overset{\wedge}{\text{light}}$, $\overset{\wedge}{\text{gray}}$ $\overbrace{\overset{\acute{}}{\text{stone}}\ \overset{\grave{}}{\text{walls}}}$	(stone walls that are light in weight and gray in color)
$\overset{\wedge}{\text{light}}$, $\overbrace{\overset{\wedge}{\text{gray}}\overset{\cup}{\text{stone}}}$ $\overset{\acute{}}{\text{walls}}$	(walls that are light in weight and made of a stone known as graystone)
$\overbrace{\overset{\wedge}{\text{light}}\text{-}\overset{\cup}{\text{gray}}}$ $\overbrace{\overset{\acute{}}{\text{stone}}\ \overset{\grave{}}{\text{walls}}}$	(stone walls that are light-gray in color)

Exercise 1: This list contains constructions which have at least three possible meanings. Mark the stress pattern above each construction and put an overbrace over any compound words. Use primary /´/, secondary /^/, and tertiary /`/, and weak /∪/ stresses. Then briefly explain the meaning of each construction in the space at the right.

1. coal black birds nest

   coal black birds nest

   coal black birds nest

2. two hundred year old houses

   two hundred year old houses

   two hundred year old houses

3. red ink stained papers

   red ink stained papers

   red ink stained papers

4. pretty expensive book ends

   pretty expensive book ends

   pretty expensive book ends

WORKSHEET B -- Page 2

5. twenty odd math students

   twenty odd math students

   twenty odd math students

6. good old bread pudding

   good old bread pudding

   good old bread pudding

Note: In English, a rising-falling intonation is customary at the end of:

a) simple declarative sentences, such as:

He saw Bill. He saw him there. He saw him there last night.

b) commands, such as:

Go! Go now! Look out for the ladder! Write quickly!

c) questions which begin with a question-word such as who, what, why, when, where, how, whom, whose:

Why did he leave? Where is the man going? What happened?

The primary stress in an English sentence usually coincides with the rise in pitch as noted in the samples above. However, note the shift from the end word in the case of the compound noun. Compare:

He used colored chalk on the blackboard. They looked for a black board.

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Exercise 2: Mark the stresses and intonation patterns for the following sentences. Avoid unusual emphases or variations, unless you wish to indicate them by red pencil or dotted lines

1. He wants an apple
2 I'd like a soda.
3. He bought a hot dog.
4. She ate a sandwich.
5. He has a wrist watch.
6. I'd like to come over.
7. She'd like to hear it.
8. I want to answer her.
9. I'm coming home.
10. I'm coming home Thursday.
11. He earned an "A".
12. He wants some soup.
13' Carol has a new car.
14. What do you want?
15. Go to your room.
16. Get out of my sight..
17. When did you tell her?
18. Where's the grocery store?
19. Which books are the best?
20. Why did you take it?
21. Try to get the street cleaner.
22. Try to get the street-cleaner.
23. In Pasadena there's a playhouse.
24. Children like to play house.
25. The wrestler has a strong hold.
26. Gibraltar is a stronghold.

Explanatory material for Worksheet C-1

A stress-terminal pattern, as the term is used here, is a combination of the primary stress and the terminal juncture (a clearly distinguishable pause in the flow of speech) that is characteristic of a phonological phrase.

One stress-terminal pattern:	a. You're láte.↘
Two stress-terminal patterns:	b. Incidéntally,→ you're láte.↘
	c. You're láte,→ incidéntally.↘
Three stress-terminal patterns:	d. Yóu,→ incidéntally,→ are láte.↘

1. When there is only one stress-terminal pattern in the sentence, the terminal falls at the end of the sentence, requiring end punctuation (period, question mark, or exclamation mark) but no internal punctuation.
2. When there are two stress-terminal patterns in the sentence (one internal and one final), punctuation will occur at the terminal of each stress-terminal pattern except one which appears before the verb. The internal stress-terminal pattern usually appears to separate from the rest of the sentence either an introductory element or an initial or final sentence modifier.
3. When there are three or more stress-terminal patterns (two or more internal and one final), punctuation will occur at the terminal of each stress-terminal pattern except an internal one appearing before a verb that is not preceded by an intervening structure (an intervening structure is an element that interrupts the flow of the sentence, as "incidentally" does in sentence "d" above). These internal stress-terminals mark off constructions which interrupt the flow of the sentence, such as restrictive clauses, items in a series, and parenthetical expressions.

WORKSHEET C-1: STRESS-TERMINAL PATTERNS -- Third Day and Fourth Day
(For use in class)

STP Punctuation Sentences

Listen carefully to the following sentences as they are played on the tape-recorder at full speed and mark the primary stresses, /´/ and the terminal junctures, /↘/, /→/, or /↗/. Then as each sentence is played at half speed, check your marking and revise as necessary, punctuating the sentence according to the stress-terminal patterns.

1. He liked the girl very much and decided to dáte her.↘
2. He liked the girl very múch,→ and he decided to dáte her.↘
3. He líked her and he dáted her.↘
4. He liked the girl very múch;↘ therefore,→ he decided to dáte her.↘
5. Because he liked the girl very múch,→ he decided to dáte her.↘
6. She would not go out with him hówever he tried to change her mind.↘ (No matter how hard he tried to date her, she wouldn't go out with him.)
7. She would not go óut with him;↘ hówever,→ he tried to change her mínd.↘ (Although she wouldn't go out with him, he still kept trying to get a date with her.)
8. When he decided to dáte,→ the girl that he liked so much was already dáted.↘
9. He decided to date the girl because he liked her very múch.↘ (answers the question "Why did he decide to date the girl?")
10. He decided to dáte the girl,→ because he liked her very múch.↘ (Answers the question, "What did he do?")
11. He decided that Mary the class glamour-girl was the one he wanted to date.
12. He decided Mary the prettiest girl in the class was the one he wanted to date.
13. He decided that Mary who was the prettiest girl in the class was the one he wanted to date.

WORKSHEET C-1: Page 2

14. He decided that the girl who was the prettiest girl in the class was the one he wanted to date. (He is choosing from a number of girls available.)

15. He decided that the girl who was the prettiest girl in the class was the one he wanted to date. (She's the only girl he knows.)

16. He decided that this girl sweet and pretty was just his type.

17. He decided that the girl coming down the hall was just his type. (Not the one on the staircase or the one at the drinking fountain.)

18. He decided that the girl coming down the hall was just his type. (What a school! She's the only girl in the whole student body!)

19. His decision to take Mary on a date was the biggest decision he made that day. (This was one of several decisions he made that day.)

20. His decision to take Mary on a date was the biggest decision he made that day. (This was the only decision he made that day.)

21. She nevertheless became angry when he asked her for a date.

22. She became angry nevertheless when he asked her for a date.

23. Nevertheless she became angry when he asked her for a date.

24. She became angry when he asked her for a date nevertheless.

25. She was a lovely young lady.

26. She was a young lovely lady.

27. He was a handsome young man..

28. He was a polite handsome young man..

29. He was a young handsome polite man.

30. He asked a blonde a brunette and a redhead.

31. He found her to be sweet gentle and kind.

32. She refused his invitation quietly politely and absolutely.

33. He asked her for a date in the morning in the afternoon and in the evening.

WORKSHEET C-1: Page 3

34. The blonde was not at home the brunette had to work and the redhead had a date.

35. The blonde the brunette and the redhead were all at the party.

36. The blonde who was not at home the brunette who had to work and the redhead who had a date were all at the party.

37. Gideon a dapper figure of mod splendor his spare frame loosely encased in a collarless burgundy jacket over a green and yellow stripped shirt creamy yellow flannel trousers cuffless and snug to his thighs tapering down to the grey suede that topped the thick black rubber soles of his hush-puppies ambled into the school cafeteria and shuffled down the main aisle his eyes cold his lips drawn in a straight line across his face his left hand wedged in a tight trouser pocket while his right casually twirled a Honda key at the end of a long gold chain hooked to his belt conscious of the eyes focused on his wine-red back as he maneuvered a tray into the serving line he prayed that a certain pair of eyes were among them covetous and adoring unaware of the lukewarm split-pea soup he'd spilled on his sleeve and hand staining the one black and the other green and from her table in a distant corner Mary sighed deeply and stifled a yawn.

WORKSHEET C-2: PUNCTUATION OF SENTENCES WITH A SINGLE STRESS-TERMINAL PATTERN -- THIRD DAY

Exercise 1. Mark the stress-terminal pattern for each of the sentences below:

1a. It's very late.

1b. John Burns thinks he can get to the library before it closes.

2a. The latch on my typewriter case is broken.

2b. There's no way I can fix it.

3a. We called to George as he went by.

3b. He didn't answer.

4a. Mr. Glutz had one strict rule in his class.

4b. Chewing gum was not allowed.

5a. We'll patch the roof.

5b. We'll get very wet during the next rain.

6a. I will not lend him my class notes.

6b. I will not let him borrow my book.

7a. Are you going with us?

7b. Are you staying here?

8a. My brother is very vain about his appearance.

8b. He thinks he is a lady's man.

9a. Get the salt from the cupboard.

9b. Put it on the table.

10a. Where did he take the shovel?

10b. Why did he take it in the first place?

11a. It's been a pleasant summer.

11b. I'm glad it's over.

Exercise 2: Combine each pair of the sentences in Exercise 1 into a single sentence, using and, but, for, or nor or a semicolon or colon to link the two elements. Some of these should be compound sentences and some of them should be simple sentences with compound predicates. Mark the stress-terminal pattern on your new sentence and punctuate it accordingly.

WORKSHEET C-2: Page 2

Exercise 3: Write the answers to the following questions: (You may use the reverse side of the page if you need to.)

1. Are the sentences with one stress-terminal pattern made up of compounded clauses or compounded predicates?
2. Are the sentences with two stress-terminal patterns made up of compounded clauses or compounded predicates? Are there any exceptions?
3. What additional phonological rule of punctuation could you derive from the stress-terminal patterns in these sentences?

WORKSHEET D: PUNCTUATION FOR SENTENCES OF THREE STRESS-TERMINAL PATTERNS, FOR ADJECTIVE SERIES, AND FOR OTHER TYPES OF SERIES. -- FOURTH DAY

Exercise 1: Reduce the b sentence to a clause or phrase or word which can be inserted between two parts of the a sentence. Mark the stress-terminal pattern of the new sentence and punctuate it according to our rules.

1a. John Burns thinks he can get to the library before it closes.

1b. John sits in the seat behind me in English class.

2a. The latch on my typewriter case is broken.

2b. The broken latch is on the right side of the case.

3a. We'll patch the roof with asphalt.

3b. There is a roof on our house.

4a. That book is a good one.

4b. I read that book last week.

5a. Mr. Wilson said nothing about the dent his wife put in their car.

5b. Mr. Wilson suppressed his anger.

Exercise 2: Each of the following sentences has two possible interpretations. Punctuate the sentence for one of the two meanings and then write the meaning below. Mark the stress-terminal patterns to correspond to your meaning.

1. The gray metal box in which he kept his bonds had disappeared.
2. The kindergarten children seated in the last three rows could neither see nor hear.
3. If I had been there I could have bought one of the rayon suits which were on sale.
4. The boys who had worked in the onion patch all day didn't feel like driving to the dance.
5. The three boys crouched behind the wall didn't see Si Pierce sneak past the entrance.

6. The boys who had volunteered to help decorate the gym came early.
7. At the bake sale many asked for the mince pie which Mrs. McMasters had made.

Exercise 3: Read the following sentences, mark off the stress-terminal patterns, and punctuate accordingly.

1. The driver of the getaway car was a little old gray-haired lady.
2. Awaiting us on the runway was a smiling young stewardess.
3. A row of majestic old pine trees lined the roadway.
4. A boisterous uninhibited greeting awaited the traveler.
5. A very sweet young thing served us our pizza.
6. A sweet efficient and very young thing served us our pizza.
7. Since this wall is light in weight gray in color and made of stone it can be described as a light gray stone wall.
8. Shrilly piercingly insistently the alarm rang out through the quiet village streets.

WORKSHEET E: THE FORMATION AND PUNCTUATION OF SUBORDINATE SENTENCE ELEMENTS -- FIFTH DAY

Exercise 1: Combine the three sentences in each group into one well-structured sentence by subordination. Introduce subordinate elements into an introductory or middle or final position. Mark the stress-terminal pattern of your new sentence and punctuate accordingly.

1a. It's very late.
1b. John thinks he can get to the library before it closes.
1c. He may not make it to the library before it closes.

2a. We called to him as he went by.
2b. He looked away and walked into a light pole.
2c. George is very absent minded.
2d. He didn't answer.

3a. We'll patch the roof.
3b. We'll get very wet during the next rain.
3c. Will the rain ever stop?

4a. The mail was late today.
4b. This is contrary to what I just told you.
4c. I think it will be on time tomorrow.
4d. Mr. Gordon's car may not break down again.
4e. Mr. Gordon is the mailman.

5a. The school election was an imitation of local elections.
5b. There was campaigning three days before the election.
5c. There were two parties.
5d. The parties offered slates of candidates.

6a. People sometimes judge a school by the actions of its students.
6b. I mean the way they act in public.
6c. People watch the way students behave on the streets.
6d. They observe student behavior at parties in the community.

7a. The crusade for wildlife protection began in the eighteen-eighties.
7b. The crusade was headed by conservation groups.
7c. Among those groups were the Audubon Society and the Boone and Crockett Club.
7d. The Boone and Crocket Club was founded by Theodore Roosevelt.

8a. Mr. Henry Dreyfus told about the subway of the future.
8b. He is an industrial designer
8c. He said the future subway will be air conditioned.
8d. It will be better lighted.
8e. It will be equipped with ceiling maps and loud speakers.

WORKSHEET F: TEST FOR SUPRASEGMENTAL PHONEME UNIT -- SIXTH DAY

A. Write a sentence which will make clear the meaning of the following words. Avoid ambiguity.

1. reject____
2. reject____
3. contract____
4. contract____
5. contrast____

B. Some of the underlined word groups could be compound nouns. If the stress pattern indicates a compound noun, write the word or words in the blank at the right. You may find more than one. Mark the primary stress over your answers.

6. At the day school they played house in the sand box. ____________ ____________

7. The school crest was inlaid in the terrazzo flooring of the court house. ____________ ____________ ____________

8. The town hall was on Main Street. ____________ ____________

9. He took tea wherever the tea table was set-- in the dining room or in the herb garden or by the swimming pool; the location depended upon the set-up. ____________ ____________ ____________ ____________

C. Mark the normal, unemphatic, non-variant intonation contours for the following sentences:

10. The porpoise nudged him playfully
11. Did you see him catch the fish
12. Are you sure he responded to the sound
13. Wave the fish high in the air and watch him jump

WORKSHEET F: Page 2

14. The hungry porpoise leaps into the air grabs the fish in his lips and slides back into the pool

15. The dim street light didn't make the street light.

16. Did the light go on at six or eight or ten.

D. In the above sentences, write the words which carry the primary and secondary stress marks.

	Sentence	Primary	Secondary
17.	10	________	________
18.	11	________	________
19.	12	________	________
20.	13	________	________
21.	14	________	________
22.	15	________	________
23.	16	________	________

E. Reduce the b sentence to a clause or phrase or word which can be included between two parts of the a sentence. Mark the stress-terminal pattern of the new sentence and punctuate it according to our rules.

24a. We told George to watch his step.
24b. George is very absent-minded.

25a. The old man stepped out into the sunshine.
25b. The old man was holding the child's hand.

F. Each of the following sentences has two possible interpretations. Punctuate the sentence for one of the two meanings and then write the meaning below. Mark the stress-terminal patterns to correspond to your meaning.

26. He assigned only one problem which I couldn't do.

27. Why didn't you sign your name as you were told to?

G. Read the following sentences, mark off the stress-terminal patterns, and punctuate accordingly.

28. The quiet restful days in the country changed her from a nervous sarcastic complainer to a calm easy-going friend.

29. The three large mahogany coffee tables were shipped today.

30. I'll have orange juice bacon and eggs bread and butter and a cup of coffee.

31. When we called to George as he was passing by he looked up but didn't answer.

32. George looked up and then he absent-mindedly walked into the light pole.

33. Galen a famous physician of the second century collected and organized earlier medical knowledge.

34. Galen added greatly to man's knowledge of the body through his discoveries facts about arteries the brain and the nervous system.

35. The natural resources of the Arctic which have remained untouched because of the lack of fuel for power can now be developed through the use of atomic fuel.

Using Audio Aids in Teaching Intonation

To study intonation effectively in class, the teacher will need a corpus of spoken utterances that follow natural speech patterns. Some of these, as noted toward the end of this unit, can come from recordings, particularly of plays. Actors tend to give natural speech patterns to their speech much of the time -- particularly in the throw away lines -- although some individual characteristics different from ordinary speech will occur.

Readings of speeches are also effective for this purpose, although most orators tend to introduce many more terminal junctures than the punctuation calls for (see the Churchill "Finest Hour" speech)

Readings of fiction are likely to be less effective, surprisingly enough, for here the reader tends to take license with the punctuation for the particular effect he wants to get (see Basil Rathbone's reading of the opening lines from "The Minister's Black Veil") Least effective are recordings of poetry, for here the poet is introducing word order that will bring out stronger stresses than we find in ordinary speech.

The most effective source from which to draw these utterances is the students themselves. If the contour of their own speech rather than someone else's is used for the patterns of pitch, stress, and juncture needed for the study, they will get a clearer insight into the way the phonological rules of punctuation underlie the conventional rules of punctuation, and they will be much more willing to explore the possibility that they may be able to use those phonological rules as guides to their own punctuation. Therefore, it would be a good idea to gather a corpus of student utterances for this study, and these utterances should be in the natural intonations of the student speakers.

One interesting way to do this would be to make a tape recording of a student discussion in class on some topic which will elicit responses from as many students as possible. The class could make their own radio dramatization of a student conversation in the lunch line, an argument over the relative values of various makes of cars, or the like. Anything that will prompt natural utterances from them will do. When the utterances are taped, the teacher could edit the tape to take out all but the examples which are typical intonation contours, typical punctuation patterns in writing, and typical stress patterns, putting them into a sequence satisfactory for study. Since the sentences used in a corpus such as this would be sentences the students themselves composed and uttered, there would be little likelihood of getting artificial intonations that readers often give to sentences not of their own making, particularly when "foreign" sentences employ diction unfamiliar to them or sentence structures not habitually theirs.

If this procedure seems too complicated to the teacher, there are simpler alternatives, though they are not as effective. For instance, the teacher might record members of the class reading some easily-read passages. Any issue of the Reader's Digest can provide satisfactory material. Or the teacher could prepare the corpus from student readings of a prepared list of sentences designed to get the intonations to be studied. A suggested list of sentences is included (See Worksheet C-1 for the Third and Fourth Day) though the teacher may wish to edit out some of the repetitions.

If the latter method were used, it would be wise to prepare the tape some time before the study of intonation begins so that the students, unaware of the purpose of the recording, do not out of self-consciousness, give artificial contours to the sentences. If the teacher has a tape-recorder capable of playing at more than one speed it would be wise to tape the sentences at the fastest speed so that in playback they can be played at half speed, where the characteristics of the contour can sometimes be more readily recognized. The teacher should not tell the students the reason for making the tape. He should just tell them there will be a use for it later, and that all they need to be concerned about is that they clearly understand what the sentences mean and can read them effectively with that meaning. After they have had a chance to study the sentences to be sure they can do this, the teacher should assign different sentences to each student, giving the class a few minutes to practice their reading of the assigned sentences.

Then he should record all the sentences successively. The order used in the sentences presented in the unit is designed to provide a step-by-step sequence in the study of stress-terminal patterns.

If any student gives a poor reading, another student should be assigned that sentence in order to insure at least one satisfactory reading of every sentence in the corpus. The teacher could avoid pointing out the poor readers by simply assigning the same sentence to more than one reader. Then he can select the best example later. If he kept a list of the students who read each sentence and put beside each name the counter number of the beginning of each student's reading, when he is ready to use the tape he can check off the best readings in advance and play just those readings to the class.